

Volume 13

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE ARACELI MARTÍNEZ-OLGUÍN

SURGICAL INSTRUMENT SERVICE)	
COMPANY, INC., et al.,)	
)	
Plaintiffs,)	
)	
vs.)	No. C 21-03496 AMO
)	
INTUITIVE SURGICAL, INC.,)	San Francisco, California
)	Friday
Defendant.)	January 24, 2025
-----)	8:00 a.m.
AND RELATED COUNTERCLAIMS.)	
)	

TRANSCRIPT OF JURY TRIAL PROCEEDINGS

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Official Reporter - US District Court

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- - -

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1 Friday - January 24, 2025

8:04 a.m.

2 **P R O C E E D I N G S**

3 ---oo---

4 (Proceedings held in open court, outside
5 the presence and hearing of the jury.)

6 **THE CLERK:** Calling civil matter 21-3496, Surgical
7 Instrument Service Company Incorporated v. Intuitive Surgical
8 Incorporated.

9 Counsel, please state your appearances for the record,
10 starting with the plaintiff.

11 **MR. McCAULLEY:** Good morning, Your Honor. Rick
12 McCauley on behalf of SIS.

13 With me at counsel table is Josh Van Hoven and Greg
14 Posdal, our corporate representative.

15 **THE COURT:** Good morning.

16 **MR. GALLO:** Good morning, Your Honor. Ken Gallo for
17 defendant Intuitive.

18 With me is Crystal Parker, Bill Michael, and our corporate
19 representative Dave Rosa.

20 **THE COURT:** Good morning.

21 All right, folks. You all have things you want to tell me
22 about.

23 Where shall we start?

24 **MR. McCAULLEY:** We had a bit of a surprise last night,
25 and Mr. Gallo and I had our first, perhaps, disagreement, but

1 we have worked on it and talked about it this morning.

2 We had an order of witnesses since Tuesday, confirmed to
3 the Court on Wednesday, defendant intended to call witnesses in
4 a certain order with Dr. Smith testifying last.

5 I can go through the preparations that we have made in
6 contemplation of that order, Your Honor; but after the close of
7 business last night, we were informed that they were changing
8 the order of the witnesses and that Dr. Smith would testify
9 late this morning presumably.

10 We had an email exchange. I objected. I had made plans
11 based on the way things were going.

12 Dr. Lamb was supposed to come in two nights ago. He came
13 in late last night with the expectation, Mr. Gallo indicated,
14 he had three hours. I know that Mr. Van Hoven, we allocated
15 the witnesses amongst each other, and I had planned today to
16 work with Dr. Lamb for the cross examination of Dr. Smith.

17 We got blind-sided by the change in the order of
18 witnesses, and I will need extra time to prepare. I suppose I
19 could wander around and waste the jury's time, but I don't
20 intend to do that to the Court. I don't intend to do that to
21 the jury or the Court staff.

22 But we wanted to enforce the -- the order of witnesses as
23 it's been disclosed for almost a week now. And I talked to
24 Mr. Gallo this morning, and he said now that they are perhaps
25 thinking about dropping a witness altogether that we spent a

1 few days preparing for.

2 So I give Mr. Gallo a chance to respond. We have been
3 talking about it in a civil manner, but the prejudice to us is
4 real in changing the order of the witnesses.

5 **THE COURT:** Before you respond, Mr. Gallo, can I ask
6 Mr. McCaulley? I want to get a finer point on it. Without
7 assuming the prejudice you're describing, could you tell me
8 what it is you're asking for?

9 **MR. McCAULLEY:** We're asking -- if they are still
10 going to call Dr. Howe, which they haven't said definitely one
11 way or the other, I would ask the Court to just enforce the
12 order of witnesses that has been contemplated all week. If
13 they are not going to call Dr. Howe, then I may ask the court
14 for additional time before we put Dr. Smith on the stand.

15 **THE COURT:** Thank you. Mr. Gallo.

16 **MR. GALLO:** Your Honor, two points. One is, there is
17 no prejudice to the plaintiff at all. And we're very seriously
18 considering dropping Dr. Howe and, therefore, Dr. Smith would
19 be the next witness.

20 The order is Grant Duque, who is on the stand. We had
21 said on Tuesday Dr. Howe and then Dr. Smith.

22 You will recall that since Tuesday, I have been quite
23 clear that we hoped and expected to finish our case today.
24 There is no way I think Mr. McCaulley could have reasonably
25 believed that he could wait until Monday to cross-examine

1 Dr. Smith, given the representations I have been making to the
2 Court.

3 Dr. Smith is our economist certain. They have known he's
4 going to testify for two years. We disclosed the order on
5 Tuesday so there can be no prejudice. We disclosed the order
6 on Tuesday of Duque, Howe, Smith. We disclosed that same
7 order.

8 And then yesterday I began thinking very hard about the
9 fact that I don't think we need Dr. Howe to testify. So I sent
10 a note to Mr. McCaulley switching the order because I wanted to
11 hear the testimony of Mr. Duque and then make a final decision
12 about whether to pull Dr. Howe. So I switched the order to
13 give us the ability to say we're not going to call Dr. Howe.
14 Mr. Smith will be the next witness up -- Dr. Smith will be the
15 next witness up.

16 So I really don't think we're going to call Dr. Howe.
17 That's the bottom line. And the notion -- I mean, I must say,
18 Your Honor, the notion that the plaintiff isn't prepared to
19 cross-examine Dr. Smith today is -- I just don't think that's
20 because of anything we've done. I have been as forthcoming
21 with the Court as I could possibly be that we were working hard
22 to close today. I don't know how the plaintiffs could have
23 assumed that they didn't need to be ready to cross-examine
24 Dr. Smith today.

25 And it's quite common at the end of a case to say: Oh, I

1 don't need this witness. I mean, the way the evidence has come
2 in, I don't need the witness. It happens all the time. I'm
3 not playing some game here.

4 The idea that we're going to rest -- we're going to end
5 today with, frankly, all it would be would be Mr. Duque and 30
6 minutes of video and then ask the jury to have to come back
7 Monday to hear Dr. Smith when they otherwise could be done I
8 think is unfair to the jury.

9 So in summary, I guess what I'm saying is I don't think
10 there is any legitimate prejudice. The plaintiff has known we
11 were trying to finish today. They have known they are going to
12 examine Dr. Smith for two years. He's our economic expert.

13 Switching the order of one witness on the last date or
14 removing a witness on the last day is hardly a monumental
15 thing, and I think the plaintiff is obligated to be ready. So
16 that's -- that's it.

17 **THE COURT:** So let me ask, because I'm looking at the
18 emails that were sent from Mr. Sherry on Tuesday and Wednesday
19 to Ms. Solorzano-Rodriguez. You all have been very diligently
20 sending on.

21 In all candor, I haven't been paying particularly close
22 attention to the order of the witnesses other than to know
23 whether or not you need me to resolve objections with regard to
24 demonstratives or slides.

25 So what I see -- and mind you, of course, I trust that

1 there have been more emails between you all -- is that as of
2 Tuesday, Mr. Sherry writes that Intuitive is advised that it
3 will call Mr. Duque and Mr. Howe after Dr. Meng and Dr. Curet.

4 Okay. Then yesterday, with an update, there is a note --
5 this is at 2:30 -- that Dr. Smith -- that Intuitive may begin
6 its direct examination of Dr. Smith today.

7 So, Mr. McCaulley, help me understand. Because at least
8 from what little -- and mind you, I'm not supposed to see all
9 of it. I haven't seen all of it, but at least from what I can
10 see, I know that I have had -- I think that I have had -- this
11 is the email I have printed out. We have been on notice of
12 Dr. Smith coming Friday at least since --

13 **MR. McCaulley:** Right --

14 **THE COURT:** -- Wednesday at 2:30.

15 **MR. GALLO:** Sorry. I didn't mean to interrupt Your
16 Honor.

17 I believe that's true. The only thing I would add to your
18 recitation is that we sent an email to the plaintiffs at 2:30
19 on Tuesday and gave them Dr. Smith's slides. I'm told those
20 were emailed to the Court on Wednesday. And the reason we did
21 it Tuesday, was that that meant he might go on as early as
22 Thursday. In other words, we gave them our two-day notice on
23 Tuesday under the order we have been working with the Court.

24 I say that because I don't think that plaintiff could
25 legitimately say that they are surprised he's going on the

1 stand on Friday.

2 **MR. McCAULLEY:** We're not surprised he's going on the
3 stand on Friday, Your Honor.

4 On Wednesday morning when we were here, Mr. Gallo gave the
5 order of the witnesses, and they estimated yesterday that they
6 had three hours. I don't -- I'm not surprised that he's going
7 on today. I'm surprised that he's going on at 10:00 o'clock in
8 the morning today.

9 Dr. Lamb got here -- I don't want to -- I don't know
10 exactly what time, but after I was in bed. And my plan was to
11 work with him today to be prepared for this afternoon. We
12 certainly expected him to go. We didn't expect to withdraw the
13 witness. We didn't expect the change in the order of the
14 witnesses. And I think under the circumstances, we worked very
15 hard to cooperate with each other.

16 Your Honor, I had wanted to raise this with the Court. I
17 think it's unfair. I think it puts us in a bad spot. We were
18 prepared certainly to start the cross examination of Dr. Smith
19 today based on the timing that was given to us yesterday,
20 but --

21 **THE COURT:** Mr. McCaulley, I need you to put a finer
22 point on it for me, because I'm -- I asked counsel to inform
23 each other of which witnesses they are going to call. I'm not
24 expecting that the order is something to which anyone
25 necessarily needs to abide. The point is to give you enough

1 time to look at things.

2 But that said, let's -- I do want to speak -- so I'm not
3 going to -- I'm not going to require Mr. Gallo to call a
4 witness he doesn't think he needs. What I do want to figure
5 out then is -- what I hear you saying is that you think you
6 want some time with Dr. Bero between him hearing Mr. Smith's
7 testimony and you doing your cross?

8 **MR. McCAULLEY:** With Dr. Lamb.

9 **THE COURT:** I'm sorry. Thank you.

10 **MR. McCAULLEY:** Mr. Bero is not here.

11 **THE COURT:** Sorry. I have been making everyone a
12 doctor for weeks now, as you all have seen.

13 So is that right, Mr. McCaulley, what -- ultimately what
14 I'm hearing is frustration at losing the time that you would
15 have had with Dr. Lamb -- excuse me, Mr. Lamb --

16 **MR. McCAULLEY:** It's Dr. Lamb.

17 **THE COURT:** Darn it. It's Mr. Bero and Dr. Lamb.

18 ...with Dr. Lamb between Dr. Smith's cross -- excuse me,
19 Dr. Smith's direct and cross.

20 **MR. GALLO:** That's what he's saying, you're right.

21 But, Your Honor, I really object to that idea. I mean, if
22 where this is going is we put Smith on direct and they have the
23 weekend to prepare for cross, I find that -- that's
24 gamesmanship as opposed to what I'm doing. I mean --

25 **THE COURT:** Let me stop you, Mr. Gallo.

1 I have no interest in giving Mr. McCaulley the weekend.
2 I'm trying to figure out -- and maybe this is my not having a
3 clear enough understanding of how long you have with Mr. Duque.

4 **MR. GALLO:** Mr. Duque is going to be about 40 minutes,
5 and we expect our direct of Dr. Smith to be an hour or less.
6 So we think we can do them both today and with, really,
7 frankly, quite fulsome cross examinations. Both of them can be
8 done today.

9 **THE COURT:** I think my hope is whether or not there is
10 a way to make it so that you get the lunch period. That is
11 about as accommodating as I'm willing to be.

12 Because I don't disagree with Mr. Gallo. The weekend -- I
13 don't want to leave that for Monday either, especially since it
14 doesn't look like there would be reason -- it doesn't sound
15 like the timing needs to spill that far into Monday.

16 So that's my -- that's my take on it.

17 **MR. McCAULLEY:** And I never asked for -- for the
18 weekend, Your Honor.

19 But I do think if Dr. Lamb -- if Your Honor would indulge
20 me to allow him to sit at counsel table with me during the
21 direct examination of Dr. Smith and we could have the lunch
22 hour, I think that would be fine.

23 **THE COURT:** Any objection, Mr. Gallo?

24 **MR. GALLO:** I have no objection to that. That would
25 be -- that would be fine.

1 **THE COURT:** All right.

2 **MR. McCAULLEY:** Are we not calling Dr. Howe? Is that
3 the --

4 **THE COURT:** I think Mr. Gallo gets to decide that in
5 his own due course.

6 **MR. GALLO:** I would like to decide that after I see
7 where we are after Mr. Duque testifies.

8 **THE COURT:** All right. While you still have me, are
9 there -- I think there are -- were there objections? I think
10 some have been withdrawn, but there were some objections to
11 demonstratives and to maybe one exhibit.

12 **MR. MICHAEL:** That's correct, Your Honor. I think
13 it's one demonstrative and one exhibit.

14 Mr. McCaulley can, of course, correct me if I'm wrong
15 about that, but happy to address those or Mr. McCaulley's
16 objections.

17 **THE COURT:** Thank you, Mr. Michael.

18 Mr. McCaulley, would you chat with me about which slide to
19 the demonstrative?

20 **MR. McCAULLEY:** I took the wrong notes up here with
21 me, Your Honor, which I've realized I don't have them. I think
22 they are down on 17.

23 But I think there's one issue. The objections to the
24 exhibits are fine. If the slide comes in, my recollection is
25 I'm okay with it.

1 There's one slide that was vague that I don't know what
2 the purpose of it is. There's no discussion in Dr. Smith's
3 report about the whole authorization issue and I -- the more
4 important issue for me, Your Honor, is I wanted to address a
5 scope objection in keeping with what we have been trying to do
6 and raise issues before they become issues.

7 I don't think that it -- and it may be that they say
8 Dr. Smith doesn't intend to testify on any of that, but my
9 position is, just so the Court knows, if your scope objection,
10 if that comes up, that's not in his reports.

11 **MR. MICHAEL:** Sorry, Your Honor. Just out of an
12 abundance of caution, I think Dr. Smith is in the courtroom.
13 So maybe we should ask him --

14 **THE COURT:** Dr. Smith, if you would please leave us.
15 Apologies.

16 **MR. McCaulley:** I'm sorry. I didn't know what he
17 looked like.

18 (Dr. Smith exits the courtroom.)

19 **THE COURT:** Maybe that's what I need to start asking
20 of the gallery before we start.

21 Go ahead. Thank you, Mr. Michael.

22 **MR. MICHAEL:** Of course.

23 So, actually, this is the first that I'm hearing of this
24 scope objection. I don't think that was in anything that
25 Mr. McCaulley sent to us or to the Court. But as to that

1 issue, I don't think it comes up in Dr. Smith's slides.

2 Dr. Smith, of course, does talk about the contract
3 provisions in -- well, in his report, and the contract
4 provisions are reflected in the slides. And he talks about the
5 fact that the contract provisions say on their face that
6 instruments made or approved by Intuitive can be used with the
7 system.

8 And so I would expect that Dr. Smith will offer the
9 opinion that SIS was not excluded from having the opportunity
10 to compete because, among other reasons, the contract
11 provisions provide for the use of instruments made or approved.
12 And SIS never asked for approval.

13 I don't think he would go beyond that. I don't think
14 there is anything beyond that in his report on that issue. So
15 I think it would be limited to that, and that would be within
16 the scope of his opinions.

17 **MR. McCUAULLEY:** I didn't see it anywhere in the
18 reports, Your Honor. So as I did for Dr. Lamb, we exchanged
19 notes about it.

20 I -- I'm glad I raised it. I don't think it's in the
21 report. I think we should deal with it now rather than in
22 front of the jury.

23 **THE COURT:** I agree.

24 Mr. Michael, as we've done during some of the questioning,
25 I'm sure you -- I'm confident you have his report and can point

1 me to the paragraph of his report.

2 **MR. MICHAEL:** I do have it, if I may have just a
3 moment.

4 **THE COURT:** By all means.

5 (Brief pause.)

6 **MR. VAN HOVEN:** Your Honor, I'm happy to be corrected.
7 There is a couple hundred pages of report. I didn't see it
8 before I raised it with the Court.

9 **THE COURT:** I appreciate you all. Better to do it now
10 than have the jury step out or to do it with them sitting in
11 the box.

12 (Brief pause.)

13 **MR. MICHAEL:** I'm sorry. Would the Court like a clean
14 copy of the report?

15 **THE COURT:** Mr. Michael, let's do this. It's okay.
16 It's okay. It's okay.

17 Let's do this: Read -- say what you would like to for the
18 record. Pass your -- maybe you can't pass your copy to
19 Mr. McCaulley. Maybe we do need a clean copy for
20 Mr. McCaulley.

21 **MR. MICHAEL:** I can start reading it into the record
22 while we get a clean copy.

23 **THE COURT:** Thank you.

24 **MR. MICHAEL:** So this is Paragraph 53 of Dr. Smith's
25 report. This is the rebuttal report to Dr. Lamb. He says in

1 Paragraph 53b [as read] :

2 "Intuitive designed the da Vinci surgical system
3 with a product vision that can only be achieved by the
4 system as a whole. Components of the system, such as
5 the da Vinci platform and EndoWrist, are integral to
6 the functioning of the system. Moreover, many of the
7 components, including the EndoWrist instruments at
8 issue, only are used with the da Vinci surgical
9 system. And the da Vinci surgical system only uses
10 components that have been manufactured or authorized
11 by Intuitive."

12 And then Paragraph 63, Dr. Smith says again [as read] :

13 "And in all instances, the da Vinci surgical
14 system uses components that are either manufactured or
15 carefully controlled and authorized by Intuitive."

16 He then gives the opinion at Paragraphs 131 through 133
17 that SIS can and does compete in many legitimate markets for
18 the repair of medical equipment.

19 And so I think that fairly encompasses the scope of what
20 Dr. Smith would say, that SIS was not excluded from competing.
21 And that, among other reasons for that, are that Intuitive's
22 contracts provide for the use of instruments made or authorized
23 by Intuitive.

24 **MR. McCAULLEY:** I don't have a copy of the report in
25 front of me.

1 (Document tendered to counsel)

2 **MR. McCAULLEY:** But it doesn't say SIS could have been
3 authorized or sought authorization. That's not stated anywhere
4 in the report. And if we're going to hear that on the stand,
5 it's beyond the scope of his report.

6 I understand 131 and 132. 133 talks about the fact that
7 SIS can compete in other areas, but it doesn't draw a
8 connection between this authorization issue.

9 This is a new issue that was raised for the first time
10 after expert reports, so I would expect that it wouldn't be in
11 there. But what Mr. Michael just -- he kind of waved his hand
12 over 131, 132 and 133, but it's not in there. There's no
13 connection.

14 **THE COURT:** Mr. Michael, I'm realizing that I -- which
15 slide is it?

16 **MR. MICHAEL:** So there are, I think, a couple of
17 slides. So there are some slides that just show what the
18 contract provisions are. I -- I don't believe there is or
19 could be any controversy over those. Those are slides 12
20 through 14.

21 And Dr. Smith is just talking about the same contract
22 provisions that he talks about in his report.

23 **THE COURT:** I'm realizing, Mr. Michael, the question
24 was probably better posed to Mr. McCaulley.

25 Mr. McCaulley, which slide is it -- I need to confirm you

1 don't object to the ones with the contract provisions. Which
2 is the one you object to?

3 **MR. McCAULLEY:** I'm not objecting to a slide in this
4 context, Your Honor. I was worried that with the contract
5 provision, which has been shown to the jury multiple times
6 being part of the slides, said exactly what I think I hear them
7 saying they are going to argue from that slide.

8 I'm objecting to the testimony. Beyond the scope. I've
9 looked at 131, 132, and 133, which are the portions that talk
10 about SIS.

11 And I'm happy to hand up -- I'm happy to surrender the
12 copy that was just handed to me, if it would help Your Honor.

13 **THE COURT:** I would appreciate that.

14 (Whereupon document was tendered to the Court.)

15 **THE COURT:** My apologies. I somehow thought this
16 was -- well, if I'm right, it sounds, Mr. McCaulley, like
17 you've looked at the slides and you're concerned about what
18 testimony will accompany those slides, which, in fact, taught
19 me, as much as I would prefer to do it outside the presence of
20 the jury, it may be better left to maybe waiting to hear the
21 answers that are drawn -- the answers to the questions that are
22 asked by Mr. Michael, assuming -- or whoever is questioning
23 Dr. Smith at that point.

24 **MR. McCAULLEY:** Smith and Lamb are doctors. Bero is
25 Mister.

1 **THE COURT:** I'm glad you all can keep it straight.

2 Well, we're almost done, and I haven't done it yet.

3 (Brief pause.)

4 **THE COURT:** I'm flipping back to 53, but having read
5 131 through 133, I tend to agree with Mr. McCaulley.

6 **MR. MICHAEL:** It was 53 and 63, Your Honor. And I
7 think those should all be read together.

8 (Brief pause.)

9 **THE COURT:** Can I ask you all -- Mr. McCaulley
10 surrendered his clean copy to me.

11 But you have yours, is that right, Mr. Michael?

12 **MR. MICHAEL:** I do.

13 **THE COURT:** I think the only place I've seen anything
14 about authorization is on -- is in Paragraph 63.

15 **MR. MICHAEL:** And 53(b), Your Honor.

16 **THE COURT:** Okay.

17 **MR. MICHAEL:** I apologize. It's just the bottom of
18 Page 34.

19 **THE COURT:** I see it. I see it.

20 So here -- so, Mr. McCaulley, your objection is as to the
21 fact that he could -- that he might offer an opinion about
22 whether SIS could have obtained authorization?

23 **MR. McCAULLEY:** Right.

24 **THE COURT:** So his report -- I agree with
25 Mr. McCaulley. I think it's clear that he's opining that only

1 authorized -- well, that only authorized entities -- that
2 da Vinci surgical system only use components that have been
3 manufactured or authorized by Intuitive, but I don't see
4 anything in his report where he says anything about SIS's
5 authorization or lack thereof.

6 What am I missing, Mr. Michael?

7 **MR. MICHAEL:** Well, Your Honor, I think that his
8 talking about the contract provisions and the fact that they
9 allow authorized third parties and then taken together with his
10 opinion that SIS's is not excluded, I do think there's a
11 connection.

12 But, you know, if the point is that we can talk about the
13 contract provisions and what those provide and the fact that on
14 their face they allow for authorization and that Dr. Smith
15 would not go further than that, I'm not sure that's going to be
16 an issue in his testimony. And I assume that would -- you
17 know, if he doesn't go further than that on the direct, his
18 cross would be accordingly limited to that as well.

19 **THE COURT:** Great.

20 **MR. MICHAEL:** So I'll -- I'll try to keep that in mind
21 with the questioning.

22 **THE COURT:** And as with all things, we'll see how it
23 all plays out.

24 May I keep this?

25 **MR. MICHAEL:** Of course, Your Honor.

1 And I had understood that SIS had an objection independent
2 as to one of the slides and one of the documents. I hear
3 Mr. McCaulley say he's withdrawing those, but, obviously, I
4 don't want to put words in his mouth.

5 **MR. McCAULLEY:** I don't remember which ones they are,
6 so I will withdraw it.

7 **THE COURT:** Okay.

8 One last question for Intuitive's counsel -- oh, no. I'm
9 sorry.

10 Mr. McCaulley, this is actually a question for you. This
11 is for both of you.

12 I think I understood Mr. Gallo to say that Dr. Smith would
13 be -- is likely the last witness?

14 **MR. GALLO:** Other than -- yeah, likely, because I
15 think we're going to pull Dr. Howe, and I will tell the Court
16 that after Mr. Duque leaves the stand, except that there's
17 about 25 minutes of two depositions to play, and that's it.

18 **THE COURT:** Okay. And, Mr. McCaulley, I may ask you
19 this later, but at this point are you anticipating a rebuttal
20 whenever that comes, whether it's Monday or today?

21 **MR. McCAULLEY:** I was anticipating a brief rebuttal on
22 Monday, depending on how today went. And I may not actually
23 seek that, Your Honor.

24 **THE COURT:** All right. So as we have been doing, I
25 will not -- I will not yet make any promises to the jury about

1 when we're -- about when we'll -- when they will get the case
2 or what next week looks like apart from letting them know that
3 whatever comes, Thursday we're dark.

4 **MR. GALLO:** Yes. Your Honor, in that regard, with
5 respect to Thursday, I -- I would like to make a request of the
6 Court that when you tell the jury that -- well, it sounds like
7 maybe it's not going to be done in the context of deliberation
8 yet.

9 What I was a little worried about, and I raised it with
10 Mr. McCaulley, is leaving an implication to the jury that they
11 should deliberate for some long or short period of time. So,
12 in other words, if they get the case on Wednesday, I would just
13 ask the Court to consider phrasing the fact that we're going to
14 be dark on Thursday as "should you still be deliberating," or
15 words to that effect, so it doesn't imply they should sit back
16 there for three days if they don't need to.

17 **THE COURT:** And can I -- of course. And can I share
18 with you all that's one of the reasons I want to tell them
19 today. They don't know -- they have -- I don't think they have
20 any sense of the fact that we're actually near the end. We
21 don't -- you all especially know you're near the end, but they
22 aren't -- they are none the wiser.

23 So I think I mentioned this to you all yesterday, maybe
24 not. It isn't clear to me at this point whether Juror Number 2
25 has actually said anything to any of other fellow jurors about

1 needing the day to attend a service. So I'm not planning to
2 either. I'm just going to say something has come up, and so
3 we're dark; right? Much like I did for my criminal trial last
4 week.

5 **MR. GALLO:** Thank you. Thank you.

6 **MR. McCAULLEY:** Your Honor, may I have the lunch hour
7 to prepare for the cross examination?

8 **THE COURT:** Yes. I heard -- I'm fine with that.

9 And, importantly, I also heard Mr. Gallo not object to
10 that. So I think that should be fine. I'm hoping that arises
11 naturally out of the flow of the witnesses.

12 **MR. McCAULLEY:** One last thing, Your Honor. If we
13 do -- I would like some time to consider whether we're going to
14 have a rebuttal case. If we are done at 1:30 or quarter to
15 2:00, I don't want to have to put a witness on if -- if
16 Mr. Gallo rests. I think that's a fair request, that we
17 would -- if we have a rebuttal case, we would let the Court
18 know by Saturday morning at 9:00 a.m. and that we could start
19 it on Monday.

20 **THE COURT:** So my only issue with that, Mr. McCaulley,
21 is that I don't have an easy way to tell the jurors not to come
22 on Monday if there's no rebuttal and we're instead just cutting
23 straight to charge conference and renewed motion for judgment
24 as a matter of law.

25 **MR. McCAULLEY:** Can you remind me, Your Honor, what

1 you're thinking about the charge conference and when closings
2 would be then under those circumstances?

3 **THE COURT:** Well, at this point -- if -- here was my
4 vision.

5 Well, you know what? We have the jury waiting back there.
6 I'm going to bring them in and I'll share with you my vision at
7 their next break. But I want to get them started. So let's go
8 ahead and start with them and go from there.

9 | MR. GALLO: Thank you.

10 (Jury enters the courtroom at 8:38 a.m.)

11 **THE COURT:** Good morning. Members of the jury, before
12 we start again with Mr. Duque, I have one small announcement
13 for you all in terms of planning for next week.

14 In light of my schedule, I just want to inform you that
15 Thursday we -- as we were last Friday, we will be dark. So
16 just so you can plan, Thursday is a day you won't need to come
17 in. So just so that you -- you've got that.

18 And with that, we're going to resume this morning
19 Ms. Parker's examination of Mr. Duque.

20 Please proceed.

21 MS. PARKER: Thank you, Your Honor.

22 GRANT DUQUE,

23 called as a witness for the defendant herein, having been
24 previously sworn, resumed the stand and testified further as
25 follows:

DIRECT EXAMINATION (RESUMED)

BY MS. PARKER:

Q. Mr. Duque, when we ended yesterday, you had just told the jury a bit about your background and some of the work that you've done on EndoWrists over the years.

Do you recall that?

A. I do.

MS. PARKER: Mr. Lee, if we could please put up Slide

(Document displayed.)

BY MS. PARKER:

Q. And, Mr. Duque, can you see that on your screen?

A. I can, yes.

Q. Wonderful.

Mr. Duque,

the EndoWrists that you've helped design and test over the years.

Can you tell the jury what's being shown on your slide here?

A. Sure. This is just a high-level overview of a typical EndoWrist instrument.

Q. And at a high level, what are the basic components of an EndoWrist?

A. Sure. I'll start on the tip. We have the end effector that includes the grip and the wrist components of the

1 instrument.

2 We have the instrument shaft, which is, essentially, just
3 the long section there that connects the distal end with the
4 proximal end.

5 And then we have the instrument back-end.

6 **MS. PARKER:** Mr. Lee, if we could please go to Slide
7 5.4.

8 (Document displayed.)

9 **BY MS. PARKER:**

10 **Q.** Mr. Duque, I want to talk in a little more detail about
11 those different components of the EndoWrist that you told us
12 about.

13 What are we looking at here on this slide?

14 **A.** We're looking at a side by side of an S/Si on the left and
15 an X/Xi on the right. And then down below, we're looking
16 specifically at the instrument back ends.

17 **Q.** What is the function of the back-end of a EndoWrist?

18 **A.** Sure. The back-end of the instrument is what engages to
19 the system arm.

20 **Q.** And it appears here that the back-end of the S/Si
21 EndoWrist is a different shape than the back-end of the X/Xi
22 EndoWrist.

23 Why is that?

24 **A.** Sure. So the shape of the instrument back-end has to
25 conform to the shape of the system arm.

1 And so I'll point out in particular the orientation of the
2 main tube relative to the housing that's unique to the system
3 arm. And so the way that the instrument installs onto the
4 system, the shape of the instrument, shape of the system arm
5 really defines how the instrument back-end has to lay out.

6 **Q.** You used the word "housing." What is the housing as it
7 relates to an EndoWrist?

8 **A.** Sure. The housing is what we call the cover or the
9 instrument housing. It essentially just covers the entire back
10 end of the instrument.

11 **Q.** What, if any, function does that housing serve?

12 **A.** So within the instrument back-end there is a series of
13 cables, pulleys, bearings, cap stands, crimps, spooling round.
14 They aren't intended to have any inadvertent contact with
15 anything. And so the instruments have to be handled. The
16 housing protects all of those inner components.

17 **Q.** And is the housing on the back-end of the EndoWrist that
18 we see here, is that designed to be opened or removed from the
19 EndoWrist at any time?

20 **A.** No, not at all.

21 **Q.** And as someone who builds and tests EndoWrists, what, if
22 any, concerns would you have with someone using an EndoWrist
23 where the housing had been removed and put back on?

24 **A.** Sure. So as I mentioned, there is cables, cables routing
25 on to pulleys. If the housing is removed, I would be concerned

1 that any one of those cables could become damaged. Any one of
2 those components could become damaged. The cables could become
3 derailed, which would render the instrument non-functional.

4 There are -- in particular for the S/Si instrument
5 back-end, there are components that install directly onto the
6 housing. There's a flush -- a component that we call the flush
7 tube. It's necessary to properly clean the instrument. It's
8 essentially a tube that runs from the proximal end of the
9 instrument all the way down to the distal end. And during the
10 cleaning process, we need to deliver turbulent flow to the
11 distal end so it could be cleaned properly.

12 If you remove the housing, you can disturb that. You can
13 kink that flush tube or damage it in a way that will not allow
14 that flow to get to the distal end.

15 In addition, there are some components. These release
16 levers, they are components that are needed to remove the
17 instrument from the system arm.

18 In the S/Si instrument, those are retained by the assembly
19 of the housing to the main chassis component of the instrument
20 back-end.

21 **MS. PARKER:** Mr. Lee, if we could please put up Slide
22 5.5.

23 (Document displayed.)

24 **BY MS. PARKER:**

25 **Q.** Mr. Duque, I want to talk a little bit more about what's

1 under that protective housing that you just told us about.

2 What are we seeing here on Slide 5.5?

3 **A.** Sure. We are seeing the instrument back-ends with the
4 covers removed.

5 **Q.** Starting on the left side of the slide under the heading
6 "S/Si," what are we seeing here at a high level?

7 **A.** Sure. Well, as I was just describing, you can see the
8 cables routing. And so they exit the proximal end of the tube.
9 They are shown in this cyan or light blue color. They route
10 through a series of pulleys that we call the back-end backup
11 pulleys so that they can route to the respective cap stands.

12 So each cable pair, which is coming from each of the
13 endofactor joints, they are routing to a particular cap stand.
14 The cables route into the cap stands onto these clamping pulley
15 components, which are shown there. They have the -- the screws
16 to clamp and unclamp them.

17 And then we're also looking at the bearings and other
18 components and the -- release levers that I mentioned earlier,
19 they are shown in orange.

20 **Q.** Thank you, sir.

21 And looking to the right side of this slide under the
22 heading "X/Xi" what, if any, key differences are there in this
23 top construction of the back-end between the different
24 generations of EndoWrists?

25 **A.** Sure. I'll first highlight that the -- the number of

1 input disks or cap stands, there are a different number.
2 There's actually five on the X/Xi instrument relative to on the
3 S/Si where we only have four. So major difference there.

4 And then the arrangement of those cap stands or input --
5 inputs are arranged in a different way that makes the overall
6 instrument more compact. But by doing that, the length of
7 cables that are required to route them from these idler pulleys
8 onto their respective cap stands is much, much longer.

9 **MS. PARKER:** If we can put up Slide 5.6, please,
10 Mr. Lee.

11 (Document displayed.)

12 **BY MS. PARKER:**

13 **Q.** Mr. Duque, can you tell us what we're looking at here on
14 Slide 5.6?

15 **A.** Sure. Now we are looking at the bottom view of the
16 instrument back-ends, S/Si on the left with its four inputs,
17 and X/Xi on the right with its arrangement of five input disks.

18 **Q.** And you referenced input disks. Where do we see those on
19 the slides?

20 **A.** They are the circular gray components.

21 **Q.** And what's the function of the input disks on the -- the
22 bottom of the EndoWrists?

23 **A.** So the input disks engage to mating features on the system
24 arm through a sterile adapter interface.

25 **Q.** And when you say they "engage," what does that mean for

1 those of us that aren't mechanical engineers?

2 **A.** Sure. So they need to orient themselves and constrain
3 themselves in a way that when there's motion at the driving
4 end, which is the system arm, where driving motion through that
5 instrument side.

6 **MS. PARKER:** Mr. Lee, if we could please go to Slide
7 5.7?

8 (Document displayed.)

9 **BY MS. PARKER:**

10 **Q.** Mr. Duque, now moving to the other end of the EndoWrist,
11 what are we looking at here on Slide 5.7?

12 **A.** Sure. We're looking at a typical end effector of an
13 EndoWrist instrument.

14 **Q.** Do all EndoWrists have the same end effector?

15 **A.** They don't.

16 **Q.** What end effector are we looking at here in this example
17 of EndoWrist?

18 **A.** This is a large needle driver.

19 **Q.** And it may be evident from the name, but what does a
20 needle driver do?

21 **A.** Sure. During this procedure, you may have to do suturing
22 and use a needle, a curved needle in most cases. The needle
23 driver is specifically used to be able to hold the needle in a
24 rigid manner so that you can maneuver that needle to do things
25 like suturing. It also needs to be able to handle the sutures

1 themselves in order to manage the sutures and tie knots.

2 Q. And can you explain to us what we're looking at here in
3 the construction of this EndoWrist?

4 A. Sure. I'll start at the top. I knew these were -- this
5 is a large needle driver because the grips have kind of a
6 carbide pad which allows for it to hold the needle properly.

7 The grips have a feature that is kind of shown labeled the
8 "yaw" and "grip pulley" that forms a pulley feature that the
9 drive cables are routed around. So the cables are routed along
10 this feature, this pulley section of the grips. As the cables
11 are pulled, it rotates that pulley, which causes motion of the
12 grips.

13 The cables, which are shown in red, they -- they route
14 through a series of pulleys that we call idler pulleys. The
15 ones that are attached to the grips themselves have to route
16 through a set of distal idler pulleys and then another set of
17 what we call proximal idler pulleys. Essentially they are
18 going through one bend and another bend until it eventually
19 gets routed through some holes in the proximal clevis
20 component, which is shown down at the bottom in that dark gray.

21 I'll call out the one component in the middle, which we
22 call the distal clevis, in light gray, that's really the
23 structure of the wrist where all of the pulleys and the grips
24 are mounted to using pins.

25 Q. And what, if any, design challenges exist in providing a

1 surgical product that uses cables and pulleys like this?

2 **A.** Sure. So as I mentioned, the cable has to route -- the
3 distal most cables that route to the grips, in order for them
4 to stay on their cable path and in order for us to have -- to
5 preserve motion, we need to preserve the cable length of that
6 cable path. And so when the instrument wrist is articulated,
7 we need to make sure that the cables stay on their respective
8 paths.

9 The instrument is small in diameter, so we have limited
10 real estate. We have to route the cables through the -- a
11 distal joint and then a middle joint. And so it has to go
12 through a series of pulleys, bending it in one direction around
13 the distal-most idlers shown in the middle and then through a
14 reverse bend through another set of idler pulleys. It has to
15 be done in compact fashion. Those pulleys themselves are
16 fairly small.

17 **Q.** And based on your work designing EndoWrists what, if any,
18 weak points or potential points of failure have you observed in
19 the distal end of EndoWrists?

20 **A.** Yes. The -- essentially, the cables. So the cables do
21 fail. If the cables are articulating and traveling through
22 these pulleys as we're moving the wrist around and as they are
23 traveling, they are bending through these small diameter
24 pulleys, first in one direction and then in the other
25 direction.

1 We have multiple joints, and so the cables need to be able
2 to bend along one pin direction and then also bend along a
3 different axis, which is orthogonal, so now bending a different
4 direction. That puts a lot of stress on the cables.

5 And because the cables have to go bend in one direction
6 and then the other, it's putting a great deal amount of stress
7 on the cables. All through this, the cables are under tension
8 as well.

9 **Q.** If it's so challenging to get these cables to go back and
10 forth in this tiny real estate, why use pulleys and cables to
11 control the distal end of the EndoWrist?

12 **A.** We are trying to keep the instrument as compact as
13 possible. We want small entry points, so 8 millimeter diameter
14 tools.

15 We are trying to mimic the dexterity of the human hand.
16 And the human hand has motions in one direction and also the
17 other direction.

18 They are applying tension. We can't apply tension using
19 straight rods because they have to bend in a direction.

20 You might be able to achieve a single bend with things
21 such as a flat sheet or shim stock or flat metal bends. But in
22 order to bend it in one direction and now the other direction,
23 you can only do that with cables.

24 **MS. PARKER:** Mr. Lee, if we could go to Slide 5.9,
25 please.

1 (Document displayed.)

2 **BY MS. PARKER:**

3 Q. Mr. Duque, we have heard a lot about cables, and we won't,
4 you know, go over this in a lot of detail today. But can you
5 explain to us, when we hear about cables and EndowWrists, what
6 are we really talking about?

7 A. So this is a closeup view of our -- our cable. The
8 diameter of this cable -- this is a zoomed-in view. The
9 diameter of this cable is less than 20 thousandths, so it's
10 quite small. This is a zoomed-in view.

11 The cable is made up of over 200 individual filaments,
12 wire, labeled wire. That wire filament is one thou normally in
13 diameter. That's the third of the thickness of a human hair,
14 so it's tiny.

15 The wires, wire filaments are wound into subcomponents
16 which we call the strands, and then those strands are wound
17 into a larger cable construction to make up the overall cable.

18 **MS. PARKER:** You can take that down, Mr. Lee. Thank
19 you.

20 (Document removed from display.)

21 **BY MS. PARKER:**

22 Q. Mr. Duque, you told us yesterday when you joined
23 Intuitive, significant portions of the manufacturing process
24 were being done manually.

25 Do you recall that?

1 **A.** I do.

2 **Q.** And has that changed at all in the 24 years you have been
3 at Intuitive?

4 **A.** Oh, absolutely.

5 **Q.** And how so?

6 **A.** There's a lot more automation. We have had to scale. We
7 have had to improve our quality. We have had to improve our --
8 our repeatability. So there's a lot more automation.

9 I mentioned before, when we first came in, everything was
10 done manually component by component. Some of those components
11 now come in as subassemblies, coming from feeder lines or
12 coming from suppliers at some level of subassembly.

13 And then there's a lot of operations that had been done
14 manually in the past that are done with some level of
15 automation, semi-automation on the line today.

16 **Q.** Mr. Duque, are you familiar with the term "calibration" as
17 it relates to EndoWrists?

18 **A.** I am.

19 **Q.** And how, if at all, is calibration relevant when
20 manufacturing EndoWrists?

21 **A.** Sure. So when you have the completed instrument assembly,
22 the cables are routed through the distal end effector end,
23 routed through the entire instrument and through the instrument
24 back-end. So the assembly portion of it is mostly done, but
25 the cables are -- they still need to be tensioned and that

1 tensioning is a calibration.

2 The technicians need to set the appropriate amount of
3 tension on each cable, and they do that to each cable pair. So
4 it's done on one side of the cable pair and then on the other
5 side of the cable pair.

6 And then after that's done the -- the instrument moves to
7 a different fixture where they measure, you know, how much
8 tension is applied. And then also takes the measurements to
9 compare the tension from one side of each joint to the other
10 side. That needs to be balanced to -- within a certain
11 threshold so that we're ensuring that the offset of the end
12 effector is within a certain threshold of what we call the true
13 zero position.

14 **Q.** And, Mr. Duque, I want to talk for just a minute about
15 that calibration process in a little more detail.

16 Starting with the older generation S and Si EndoWrists,
17 were those devices calibrated using a manual or an automated
18 process?

19 **A.** For S/Si it was manual.

20 **Q.** Mr. Duque, can you please turn in your binder to what's
21 been marked as Exhibit TX-622.

22 (Witness complied.)

23 **A.** I'm here.

24 **Q.** And do you recognize that document, sir?

25 **A.** I do.

1 **Q.** And what is it?

2 **A.** So this is an example of a manufacturing processing
3 instruction or MPI. It is one of several documents that we use
4 to define the manufacturing or assembly process involved to
5 build an EndoWrist instrument. We also use it to train
6 assembly technicians.

7 **MS. PARKER:** Your Honor, I would seek to admit
8 Exhibit 622 and publish it to the jury. I understand there are
9 no objections.

10 **MR. VAN HOVEN:** No objection.

11 **THE COURT:** It's admitted and you may publish it.

12 (Trial Exhibit 622 received in evidence)

13 (Document displayed.)

14 **BY MS. PARKER:**

15 **Q.** Mr. Duque, you mentioned these were manufacturing process
16 instructions.

17 Which generation of EndoWrists do these apply to?

18 **A.** These are for IS1200, IS2000 and, IS3000 instruments.

19 **Q.** Is there another name that the jury might recognize those
20 numbers by?

21 **A.** Sure. S/Si.

22 **Q.** Mr. Duque, if we could go look at the first step of these
23 manufacturing process instructions. It reads [as read]:

24 "Install the unit on an input nest with the
25 appropriate wrist nest."

1 Do you see that?

2 **A.** I do.

3 **Q.** What is an input nest?

4 **A.** So an input nest is a fixture that adapts to the
5 instrument back-end. It holds the input disks at their nominal
6 zero position.

7 **Q.** What about a wrist nest, what is that?

8 **A.** So the wrist nest is another fixture to install over the
9 instrument end effector and it holds the grip and wrist at its
10 nominal zero position.

11 **Q.** And are the same input nests and wrist nests used in
12 calibrating every S and Si EndoWrist?

13 **A.** No, they are different for each type of instrument.

14 **Q.** Can someone go out and just buy one of those input nests
15 or wrist nests and use it to tension the cables on their
16 EndoWrists at home?

17 **A.** No. These are custom to our EndoWrists.

18 **Q.** Mr. Duque, if we can look down on the page to step six of
19 the manufacturing process instructions. It reads [as read] :

20 "Insert the cable tensioning tool into the
21 tensioning hole on a clamping pulley."

22 Do you see that?

23 **A.** I do.

24 **Q.** And what is a cable tensioning tool?

25 **A.** So a cable tensioning tool is another fixture. It's

1 essentially a miniature torque driver, very much like the
2 torque driver that you would use to set the torque on the lug
3 nuts of your car wheel; but this is one that's been specially
4 designed to apply the correct amount of tension to our
5 EndoWrist instruments.

6 **Q.** And if we look to step seven, the first sentence reads
7 [as read] :

8 "Move the tensioning tool towards the crimp until
9 the correct tension is reached (indicated by the marks
10 on the tensioning tool)."

11 Do you see that, sir?

12 **A.** I do.

13 **Q.** What's being instructed here for the technician to do?

14 **A.** Sure. So the tensioning tool is installed onto holes or
15 receiving receptacles on each of the clamping pulleys. They
16 are rotating it. And as they are rotating it, there is an
17 indicator on the tensioning tool that the operator or the
18 technician is looking at.

19 When that indicator aligns with certain markings on that
20 tension tool, it's applying -- we know that that's applying a
21 certain threshold of tension to the cable.

22 **Q.** And does every EndoWrist get tension to the same
23 indications or markings on the tensioning tool?

24 **A.** No. The tension is different for various instruments.
25 It's even different for each of the inputs.

1 Q. Is that micro-tensioning tool with those markings that
2 your technicians use to tension the cables, is that something
3 that someone can go out and buy? You mentioned it was similar
4 to what you used to adjust tension your tires. Can I buy one
5 of those in a store?

6 A. No. It's custom to our manufacturing process.

7 Q. If one of your technicians didn't have their
8 micro-tensioning tool one day, could they just tension the
9 cables in the S and Si EndoWrists by feel?

10 A. No, they couldn't. It's difficult. It's hard to identify
11 how much tension is actually being applied to the cables
12 without the tensioning tool. It can't be done by hand.

13 Q. And what happens in the process briefly once -- once a
14 technician tensions the cables to the indicated markings, what
15 happens then to finish the tensioning process?

16 A. Sure. So they set an initial tension, as per the process
17 we described. First they did one side of the cable pair and
18 then the other. They will go through the series of the other
19 input disks to complete the tensioning on each of them.

20 Then the instrument gets installed onto another fixture
21 that we call the instrument performance tester and it will go
22 through a series of motions. With the wrist nest on, holding
23 the end effector at its true zero position, this fixture will
24 drive a known amount of torque through each of the input disks
25 to measure how much translation there is. Essentially how much

1 travel there is, how much stretch there is in the cable.

2 That's what we call slack.

3 So it's measuring the slack, kind of a measurement of how
4 much tension is applied for each direction. It will turn in
5 one direction and then -- for taking a measurement in one of
6 the cables, and then turn in the opposite direction to measure
7 the tension on the other side of the cable. So it's ensuring
8 it's within a certain threshold. And then it's comparing the
9 tension from one side to the other to make sure that it's
10 balanced.

11 **Q.** And does that happen for every EndoWrist that comes --
12 every S and Si EndoWrist that comes off the line?

13 **A.** That's correct, for every joint.

14 **MS. PARKER:** Mr. Lee, we can take that down for now.
15 Thank you.

16 (Document removed from display.)

17 **BY MS. PARKER:**

18 **Q.** Mr. Duque, we have talked about the process for tensioning
19 S and Si EndoWrists. What, if any, differences are there in
20 how Intuitive calibrates X and Xi EndoWrists?

21 **A.** So for X/Xi, that tensioning process is automated. When I
22 was describing the S/Si, the technician is applying tension.
23 You put it on a fixture that measures the tension and then
24 measures the balance between tension. If it's not within a
25 certain threshold, they have to take it off and then re-tension

1 to try to get to that target. So it's bigger than -- they have
2 to keep re-tensioning it until it falls within the certain
3 acceptable thresholds.

4 For X/Xi, after the instrument is built, cables are
5 routed. The cables are routed to the cap stands. The bottom
6 of the cap stand, one of the cable pairs, there's not -- it's
7 not allowed to be adjusted. It's -- there's no adjustment. It
8 just needs to be routed.

9 And then there's a clamping pulley on the top section,
10 that has some ability to be rotated. The technician only needs
11 to route it onto that spool. They then put it onto an
12 Xi-specific instrument performance tester, and that fixture
13 will automatically set the appropriate amount of tension and
14 then go through a series of measurements to measure how far off
15 the instrument end effector is from the true zero position and
16 record that number.

17 And instead of having to chase after being within a
18 certain threshold, it will just take that measurement and
19 record that information onto the RFID chip of Xi instrument.

20 **Q.** And you mentioned that you record that, that tensioning
21 information on the RFID chip. Are you aware of any other names
22 for that chip that the jury might have heard?

23 **A.** The RFID chip.

24 **Q.** And are you familiar with something called an Atmel chip?

25 **A.** I am.

1 **Q.** How do those two things relate?

2 **A.** The Atmel chip is part of the RFID assembly.

3 **Q.** Mr. Duque, I want to talk a little bit about testing of
4 EndoWrists, which you told us briefly about yesterday was
5 something you had been involved in.

6 Is there a way for us to think about, at a high level, the
7 different types or buckets of testing that Intuitive does on
8 its EndoWrists?

9 **A.** Sure. At a high level, we have our formal V&V testing, so
10 formal testing that gets entered in and reported into our
11 design history folders. And then we have informal testing,
12 things that we do to inform design decisions, to do cause
13 analysis, failure analysis and things like that.

14 **Q.** Great. Let's take those buckets separately. Starting
15 first with that informal testing bucket, what do you mean when
16 you say "informal testing"?

17 **A.** So informal is exactly that. It's informal. When we're
18 evaluating a design or a change to a design or doing failure
19 analysis, we want to get to decisions as quickly as possible.

20 So informal means exactly that. It will do whatever is
21 needed to kind of answer those questions.

22 We might take, you know, some component level testing and
23 take them through, you know, a series of tests to failure or
24 accelerated testing to really exacerbate and test these things
25 so that we can make decisions quickly. But it's informal

1 because we're using, you know, components that are not fully
2 traceable. You know, they have been prototyped or they are,
3 you know, not fully traceable. We're using test methodologies
4 that we've defined as needed for a question that we're trying
5 to answer at the time.

6 Q. And what's the point of having informal testing? Why not
7 just jump to your formal testing and speed up the process?

8 A. Sure. We're -- we're trying to look at solutions. And so
9 there may be something that we're trying to correct, something
10 that we're trying to improve.

11 As a design engineer, you know, you'll come up with
12 different ways to solve that. You don't know -- you might have
13 multiple solutions to achieve the same -- the same thing. In
14 order to really weed those out, to choose the most optimum
15 solution, you want to do that testing beforehand. We don't
16 know what that final configuration is just yet.

17 And when we kick off formal V&V, formal V&V testing, it's
18 a huge amount of resources. We want to have confidence in what
19 our best optimum solution is.

20 Q. And moving to that second bucket, that formal -- I think
21 you referred it to as V&V testing? What does V&V stand for?

22 A. So V&V is verification and validation.

23 Q. And what is the goal of that formal verification and
24 validation testing?

25 A. So it's to ensure that all of the requirements, both

1 functional requirements and product requirements, are met.

2 Q. And when we talk about formal verification testing, what
3 does that part of the V&V equation encompass?

4 A. Sure. Verification testing, those are tests that are
5 quantifiable, things that we can measure and quantify. They
6 align with functional requirements, which are very specific.

7 As an example, we might have a requirement that the -- a
8 specific component must be able to withstand two pounds of
9 force without breaking.

10 For the verification test, we'll actually apply a load
11 until it breaks and ensure that -- and take a measurement of
12 when it breaks and ensure that it meets that two-pound minimum.
13 So it's something that's measurable.

14 Q. What about the other half of the equation, formal
15 validation testing? What does that encompass?

16 A. So validation testing are test cases that are assessed
17 qualitatively. They align with requirements that are for the
18 product, sort of what a customer would see. So we have product
19 requirements.

20 And the example I'll give is a product requirement might
21 be this device must be able to hold and retract a liver for a
22 specific procedure. And so in the validation testing, we'll
23 have somebody that is acting as -- from the view of the
24 customer, we have a clinical engineer that's acting as the
25 voice of a customer, a surgeon, and they will go through a -- a

1 lab, a mock-up procedure, to demonstrate that they can, in
2 fact, retract a liver.

3 Q. How do the test methodologies used for formal testing
4 compare to those that you use for that informal testing that
5 you described to us?

6 A. Sure. So with -- the formal V&V testing, it's regimented.
7 We need to have released protocols that have already been
8 reviewed, approved, and released before we start the testing.

9 The test devices that we're using, as well as the
10 equipment that we're using, they all have to be traceable
11 within calibration. They -- we have to have a record of their
12 traceability, and they have to have been already confirmed to
13 meet the design intent of the specifications.

14 Q. Okay. Mr. Duque, can you please turn in your binder to
15 what's been marked as Exhibit 574.

16 (Witness complied.)

17 Q. Do you recognize Exhibit 574, sir?

18 A. I do.

19 Q. What is it?

20 A. This is a protocol for the reliability life test of the
21 Mega SutureCut and Large SutureCut improvements for grip cable
22 life.

23 MS. PARKER: Your Honor, I would offer Exhibit 574. I
24 understand there are no objections, and I would seek to publish
25 it to the jury, please.

1 **MR. VAN HOVEN:** No objection.

2 **THE COURT:** It's admitted, and you may publish it.

3 (Trial Exhibit 574 received in evidence)

4 (Document displayed.)

5 **BY MS. PARKER:**

6 **Q.** Mr. Duque, you mentioned a moment ago that this is a life
7 test protocol.

8 Going back to the different buckets of testing that you
9 were just telling us about, where does a protocol like this fit
10 into those buckets?

11 **A.** Would fall under verification testing.

12 **Q.** Sir, if we look down the page, there is a section titled
13 "Purpose." Do you see that?

14 **A.** I do.

15 **Q.** And the second sentence under "Purpose" reads [as read] :

16 "The purpose of this testing is to confirm that
17 the test articles with the updated components meet the
18 requirements of the functional and architectural
19 requirements listed below."

20 Do you see that?

21 **A.** I do.

22 **Q.** And in terms that -- for those of us who, again, don't go
23 into this on a daily basis, what's being discussed there as the
24 purpose of the testing?

25 **A.** Sure. So the test articles with the updated components

1 means that we're trying to evaluate some change to an existing
2 design. The Mega SutureCut and Large SutureCut needle driver,
3 they are already existing. We were evaluating some change, and
4 it looks like that change included a component change.

5 When we make a component change, we want to ensure that
6 that change still meets all of the functional and architectural
7 requirements.

8 **Q.** And if you were just making certain changes to an existing
9 product, why do you have to go through the whole testing
10 process if you're just changing, you know, certain components?

11 **A.** So we want to ensure that we still meet all of the product
12 requirements. It's sort of a regression test. We don't want
13 to inadvertently implement a change that jeopardizes meeting
14 other requirements. So we'll go through the series of all of
15 the functional and product and architectural requirements to
16 ensure that all of the requirements are still met.

17 **Q.** If we could take a look at the second page of the exhibit,
18 sir.

19 If you look there, there is a section quited "Scope." Do
20 you see that?

21 **A.** I do.

22 **Q.** Fifth paragraph starts "A Weibull design" --

23 Do you see that?

24 **A.** I do.

25 **Q.** It reads [as read] :

1 "A Weibull design of reliability analysis with a
2 90/90 (reliability and confidence) and a beta of 5 is
3 used to determine the production number of human
4 uses."

5 Do you see that?

6 **A.** I do.

7 **Q.** It's a lot for Friday morning. We're going to take it in
8 pieces.

9 What does it mean when it talks about a Weibull design of
10 reliability?

11 **A.** Sure. A Weibull is a statistical model that's used to
12 predict reliability in life.

13 **Q.** And what is the role or why are you using a statistical
14 model in your formal testing?

15 **A.** We want to have confidence. And so using a statistical
16 model gives us some amount of design margin.

17 **Q.** Staying in that sentence, we saw a reference to 90/90
18 liability and confidence. What is that discussing?

19 **A.** So when we say 90/90, we are 90 percent confident that
20 90 percent of the devices will meet the requirement.

21 **Q.** And in the next sentence, we see it reads [as read] :

22 "The projected number of human uses for this test
23 article is 10, requiring completion of 15 life
24 cycles."

25 Do you see that?

1 **A.** I do.

2 **Q.** And what is a life cycle when you're talking about
3 testing?

4 **A.** A life cycle includes the instrument being used through a
5 procedure, but also includes the reprocessing steps. So the
6 instruments are reusable. And so they have to -- after they
7 are used, they have to go through a cleaning and sterilization
8 process.

9 **Q.** And why if the -- if the number of human uses for this
10 article was going to be ten, why does your testing here show
11 you're doing 15 life cycles?

12 **A.** Sure. So the Weibull calculation, it's dependent on the
13 sample size. And so as part of this protocol, it looks like
14 there's a sample size of four. And for a sample size of four,
15 in order to meet 90 percent confidence for a 90 percent
16 reliability, those four test samples would need to achieve 15
17 to get the required 90 percent confidence.

18 **Q.** And, Mr. Duque, if someone were just to look at the
19 results of the formal validation and verification testing done
20 on a particular EndoWrist and suggest that that was all of the
21 testing that had been done, would you agree or disagree with
22 that?

23 **A.** I disagree.

24 **Q.** Why is that?

25 **A.** So the report would be the formal V&V report. It doesn't

1 include or account for all of the preliminary testing that was
2 done, the feasibility testing that was done, the bench-top
3 testing that we talked about before, as well as any dry run
4 testing we may have done to get confidence going into formal
5 V&V.

6 It also doesn't account for any times that we've run the
7 formal V&V and we failed. What we are looking at is the
8 successful result.

9 **Q.** Mr. Duque, based on your experience working at Intuitive,
10 how would you describe the time and resources that Intuitive
11 puts into testing its EndoWrist products?

12 **A.** It's significant.

13 **MS. PARKER:** Mr. Lee, we can take that down. Thank
14 you very much.

15 (Document removed from display.)

16 **BY MS. PARKER:**

17 **Q.** Mr. Duque, you mentioned yesterday that when you joined
18 Intuitive in 2001, there were seven EndoWrists that were
19 already on the market; is that right?

20 **A.** That's correct.

21 **Q.** And were those EndoWrists being sold with a use limit?

22 **A.** Yes, they were.

23 **Q.** What was that limit?

24 **A.** It was ten for all of them.

25 **Q.** And what was your impression of that ten-use limit on

1 EndoWrists when you joined in 2001?

2 **A.** When I first joined, the company was still very spartan
3 and those devices were very new. It was a -- it was a high
4 bar. We weren't achieving that through -- put even at life
5 zero. We were failing instruments coming off the manufacturing
6 line, so it was a pretty high bar.

7 **Q.** And based on the work that you've done over the years at
8 Intuitive, if it were suggested to you that the use limits on
9 EndoWrists were a marketing ploy or a way to sell more
10 EndoWrists, what would your reaction to that be?

11 **A.** I disagree.

12 **Q.** Why is that?

13 **A.** Like I said, it was -- it was difficult to achieve ten.
14 We had to redesign, optimize -- redesign the components,
15 redesign the processes, retest. It took a while for us to get
16 to ten. There was a time when we didn't achieve ten for some
17 of those instruments.

18 **Q.** And based on your experience at Intuitive, if it were
19 suggested that the way that you should be setting use limits is
20 to test some EndoWrists until they fail and then pick a number
21 one under that, why isn't that a process you used to set use
22 limits?

23 **A.** Well, we talked about the Weibull analysis. When you're
24 running life tests, the data is not clean. You'll run tests --
25 even if you had a target to, say, ten, some of those test

1 devices might fail at ten. Some might fail at eight or nine.
2 Some of them will fail at 15.

3 The data is not clean. But that's what data that goes on
4 into -- you take the aggregate of all those samples and you run
5 it through your Weibull calculation to calculate what
6 confidence and reliability.

7 **Q.** Thank you, sir.

8 You testified just a moment ago that when you began
9 designing and testing EndoWrists, that the target was for them
10 to be used for ten uses.

11 Did there come a time when you began work to qualify
12 EndoWrists for use beyond ten lives?

13 **A.** Yes.

14 **Q.** And did that work have a name?

15 **A.** We called it the Extended Use Program, or EUP, with
16 Intuitive.

17 **Q.** And when did your work on the Extended Use Program begin?

18 **A.** So we started talking about it at the very tail end of
19 2018, beginning of 2019.

20 **Q.** And how did the Extended Use Program or your involvement
21 in it come about?

22 **A.** Sure. So I managed core instruments sustaining
23 engineering team. So over the course of -- from the initial
24 launch of the Xi instruments, I have a team of engineers that
25 were working to improve the reliability. That reliability

1 number was not great when we initially started, launched the Xi
2 instruments. It took years to get it down.

3 So we got it down to a certain point. Over the course of
4 four or five years, we got to a failure rate that was getting
5 to a sustainable low number, below two percent, that we felt
6 good about.

7 And we started to ask the question: Can we take credit
8 for all of the various improvements we've made over the years
9 to see if we can achieve something more?

10 Q. And once that question popped up and you decided to look
11 at qualifying extended uses, what happened next?

12 A. Those had a lot of instruments already in test for various
13 minor changes. We had been making all these incremental
14 changes all along. So we had a lot of engineering test devices
15 that had already undergone some level of testing to qualify
16 those individual changes.

17 We ran through a series of engineering tests to accelerate
18 some of the testings to inform, you know, as confidence of
19 whether or not it was -- we can achieve something more than
20 ten.

21 Q. And did you immediately jump in and start testing all of
22 the X and Xi EndoWrists at the same time?

23 A. No.

24 Q. Why not?

25 A. The life testing is a pretty big undertaking. It requires

1 a lot of resources. And we wanted to start with the ones that
2 made the most sense. And so we looked at our instrument
3 portfolio and we identified which ones would be -- would have
4 the best chance of improving their -- their lives. And, also,
5 which would have the most impact.

6 **Q.** And what do you mean when you say "which ones would have
7 the most impact"?

8 **A.** Sure. We were looking at the instruments that were most
9 highly used. What were the most popular instruments that our
10 customers were use using.

11 **Q.** And why prioritize those instruments for extended life
12 testing?

13 **A.** Resources investment is huge. We want to -- as always,
14 want to have the most impact. So if we're starting with the
15 most popular instruments that are used, that would have the
16 most impact to our customers.

17 **Q.** What happened after you ran that engineering testing that
18 you were telling us about? What was the next step in the
19 process?

20 **A.** So we started to get an idea of what could be achieved,
21 gaining confidence. Some instruments were better than others.
22 And so we started to -- we had enough data to be able to
23 present that and, more broadly across the organization, to
24 pitch it as an official project.

25 **Q.** And did there come a time in the Extended Use Program

1 testing that you did formal verification and validation
2 testing?

3 **A.** Yes.

4 **Q.** And can you describe for us what that testing looked like?

5 **A.** So with the Weibull calculation and, you know, in order
6 to -- for efficiency, we set on a sample size of 22, at least
7 22 instruments. That gives us good -- it optimizes the
8 duration of test.

9 We had to build up test units. We had to update our
10 protocols so that they were allowing for testing through
11 failure.

12 So we had to go through the process of writing up a test
13 plan, the respective protocols, including the reliability
14 protocol.

15 And then we had to do the resource management. So how
16 long does it take to test 22 instruments? And we had to test
17 each of the instruments that were candidates for this EUP
18 program.

19 Twenty-two samples, it takes -- at best, you can do three
20 instruments on a system at a time. So you need to have
21 multiple systems, you have to have multiple technicians that
22 have to be trained to the protocol. And in addition to that,
23 you have to account for the reprocessing steps.

24 So within the protocols, we're trying to identify typical
25 worst case. And so we'll have a reprocessing protocol. That

1 reprocessing step takes over three hours. And so it takes a
2 long time.

3 So at best you're getting, at most, one cycle a day on
4 each of these instrument sets. So just to capture all that,
5 it's six, eight, ten weeks to do each instrument.

6 Q. And you mentioned earlier that leading into the Extended
7 Use Program, you had done a lot of improvements or changes to
8 the X/Xi EndoWrist. Do you recall that?

9 A. I do.

10 Q. Even after all of those improvements that you had made,
11 were there any EndoWrists where you had to make additional
12 changes before they entered into extended use testing?

13 A. Yes. So the original premise behind the EUP program was
14 let's take advantage of all the instrument improvements, design
15 improvements, manufacturing improvements that we've done over
16 the years and just test them as they are.

17 We were, thankfully, able to do that with five of the
18 instruments. But there was one particular instrument that we
19 knew from our engineering bench-top testing and from previous
20 testing that we've done to qualify, you know, various other
21 changes, that it was just barely meeting ten.

22 Q. And what did you have to do to that instrument before it
23 entered extended use testing?

24 A. We had to make a significant design change, and it was a
25 change to the -- the cables themselves.

1 Q. You talked about extended use testing for X and Xi
2 EndoWrists.

3 Were any steps taken as part of the Extended Use Program
4 to qualify S and Si EndoWrists for extended lives?

5 A. No.

6 Q. Why not?

7 A. We were in new territory. You know, we -- we hadn't
8 really tested to this level of rigor beyond ten. So the
9 testing that we were doing for EUP program had to be done
10 uniquely for each instrument.

11 We chose the X/Xi platform and the specific instruments
12 for that initial set because they had the largest impact. They
13 were the most popular instruments at the time.

14 Q. Mr. Duque, I'll represent to you that the jury has heard
15 some testimony in the case that at times, Intuitive would
16 determine that testing performed on X and Xi EndoWrists could
17 be used and counted for S and Si EndoWrists.

18 Are you generally familiar with those kind of situations?

19 A. I am.

20 Q. And why then, when it came to testing extended lives,
21 could the testing on X/Xi EndoWrists not just be ported over
22 and used for the older generation EndoWrists?

23 A. Sure. We write justifications. I talked about the amount
24 of resources that's required to go through reliability testing.
25 It's significant.

1 And so we're always looking at optimizing, you know, the
2 results of that testing to be applied to as many products as
3 possible. So we -- we write justifications in that so that we
4 can gain the most out of this amount of work.

5 I've written those justifications myself. Teams that
6 report to me, we've written those justifications. But it has
7 to be done case by case. It depends on the changes that we're
8 making.

9 So when we're assessing a design change, a component
10 change or a pulley change or even a cable change, we'll have to
11 go through that specific scope of the design change and assess
12 whether or not it makes sense that testing on one platform is
13 still applicable to the other.

14 In the case of comparing X/Xi instruments to the S/Si
15 instruments, as we just kind of walked through, there are
16 significant differences in terms of the back-end assembly, the
17 entire make-up of the instrument that didn't make sense. We
18 couldn't make that assessment to say that one justifies or is
19 applicable to the other.

20 **Q.** And, sir, did there come a time that Intuitive released
21 X/Xi EndoWrists with extended lives?

22 **A.** Yes.

23 **Q.** And when was that?

24 **A.** That was in 2020.

25 **MS. PARKER:** Your Honor, if I may have just one

1 moment? Thank you.

2 (Discussion held off the record between defense
3 counsel.)

4 **MS. PARKER:** Your Honor, may we have just a
5 five-minute break really before we tender the witness?

6 **THE COURT:** It's a good time.

7 Members of the jury, I'll remind you to please not begin
8 discussing the merits of this case yet. Do not do any
9 research, do not chat with anyone; and if anyone tries to talk
10 with you about the case, please let us know.

11 All rise for the jury, please.

12 And we'll come back at -- let's call it 9:40.

13 (Jury exits the courtroom at 9:28 a.m.)

14 **THE COURT:** Mr. Duque, you're welcome to take a break,
15 if you like to.

16 (Witness steps down.)

17 Counsel, a couple quick things.

18 **THE COURT:** Mr. Van Hoven, yesterday's submission you
19 emailed to my Courtroom Deputy, please put it on the docket.

20 Actually, that might be it for right now. I will see you
21 all at 9:40.

22 (Whereupon there was a recess in the proceedings
23 from 9:20 a.m. until 9:41 a.m.)

24 **THE COURT:** Ms. Parker, continue if you have anything
25 else.

MS. PARKER: No further questions, Your Honor. We will tender the witness.

THE COURT: Thank you.

MS. PARKER: Your Honor, we have been handed a series of redactions that was never cleared with us. If counsel attempts to use these, we object.

THE COURT: Get started, Mr. Van Hoven. Let's see where we get.

Mr. Van Hoven, before you start, can I ask, are those redactions in this set?

MR. VAN HOVEN: I don't have a set for you right now. It's one line on each of two documents, and it's highlighted.

THE COURT: All right. Well, let's see where we get.
Go ahead.

CROSS-EXAMINATION

BY MR. VAN HOVEN:

Q. Good morning Mr. Duque.

A. Good morning.

Q. My name is Joshua Van Hoven. I'm counsel for the plaintiff SIS.

You have a great deal of familiarity with EndoWrist instruments through your 20 years at Intuitive; right?

A. I do.

Q. I have what's previously been admitted as Trial Exhibit 1644.001 and Trial Exhibit 1644.003.

1 **MR. VAN HOVEN:** May I approach the witness and hand
2 these to him?

3 **THE COURT:** You may.

4 (Whereupon documents were tendered to the witness.)

5 **BY MR. VAN HOVEN:**

6 **Q.** You spoke a bit this morning about the proximal housing of
7 the EndoWrist instruments; right?

8 **A.** The back-end housing.

9 **Q.** Or back-end housing, also called proximal sometimes?

10 **A.** The proximal end of the instrument, yes.

11 **Q.** Could you show us where that proximal housing is on the
12 EndoWrist instrument?

13 **A.** We're looking at the back-end of the instrument. This
14 light gray is the housing.

15 **Q.** And I will use back-end for that from now on out. Sorry
16 about that.

17 What are the approximate dimensions of the back-end
18 housing?

19 **A.** 1.75 in one direction, and then roughly three and a half
20 inches, looking at it kind of in a -- this view. And the
21 overall height of it is between two and a half and
22 three inches.

23 **Q.** And, sorry, what was the length? The length, that was
24 what?

25 **A.** The length this way?

1 **Q.** Yes.

2 **A.** Approximately three and a half inches.

3 **Q.** And where do the -- and that's where the cables -- there
4 are cables housed in that back-end housing; right?

5 **A.** Correct.

6 **Q.** And those are crimped to a steel rod that's in the shaft?

7 **A.** They are crimped. A steel rod that we call a crimp in
8 itself.

9 **Q.** Can you show us in the instrument where that crimp
10 happens?

11 **A.** I can't without removing the housing.

12 **Q.** Can you point to approximately where that would be?

13 **A.** So there would be crimps aligned with the axis of each of
14 the input disks. And here, and towards the top here, at each
15 of the three locations for the three back input disks.

16 **Q.** And, sorry. Are you talking about the connection to the
17 input disks or to the rods for each -- that attach to each of
18 the cables?

19 **A.** I'm talking about the crimps at the end of each of the
20 cables.

21 **Q.** And I'm asking about the crimp location between the cables
22 and the rods, where is that?

23 **A.** I see. That would be in the very root of the main tube
24 section.

25 **Q.** At the very top of that tube; right?

1 **A.** The top is how I have it oriented now, yes.

2 **Q.** And then the cable also then -- the full extension of that
3 cable then is between that crimp at the top to the connection
4 to the disk in the housing; right?

5 **A.** Sorry. Can you state that one more time?

6 **Q.** Yes. So I'm just trying to understand the cable, the
7 cables, where those actually are. It goes from that top point
8 that you pointed to to a location in the housing; correct?

9 **A.** That's correct.

10 **Q.** And can we go to the distal or tool end?

11 And you just spoke about cables this morning, right, at
12 the distal end?

13 **A.** I did.

14 **Q.** And there's also a crimp between those cables to the
15 stainless steel rod at the distal end?

16 **A.** That's correct.

17 **Q.** Could you show us where that crimp is?

18 **A.** Right around this area here (indicating).

19 **Q.** So the length of the cables at that distal end would be
20 between the crimp and that -- the connections to the pulleys at
21 the tool?

22 **A.** Sorry. I didn't understand your question.

23 **Q.** I'm asking about the length of the cable from that
24 crimping point to the distal tool. Is that about what it is,
25 what you're showing there?

1 **A.** Yes. I would say from their termination point at the
2 joint to the -- around, I'd say, an inch back from this metal
3 section here.

4 **Q.** And so -- and is that about an inch pretty typical for
5 EndoWrist instruments at the distal end?

6 **A.** It depends on the instrument. So some instruments have
7 longer wrists than others.

8 **Q.** What would be one of the longest ones?

9 **MS. PARKER:** Objection. Vague. Specific as to
10 generation of product.

11 **THE COURT:** Specify that, please.

12 **BY MR. VAN HOVEN:**

13 **Q.** For an Si, what would be about the longest length of the
14 cable at the distal end of the tool that you're aware of?

15 **A.** Not more than two inches.

16 **Q.** And what is that in centimeters?

17 **A.** About five centimeters.

18 **Q.** That's a lot less than ten; right?

19 **MS. PARKER:** Objection. Vague.

20 **THE COURT:** Overruled.

21 Can you please answer that question, Mr. Duque.

22 **A.** Five is half of ten.

23 **BY MR. VAN HOVEN:**

24 **Q.** It's a lot less than 30, isn't it?

25 **A.** It's less than 30, yes.

1 Q. Quite a bit less, isn't it?

2 A. Depends on what we're talking about.

3 THE COURT: Sustained.

4 Keep going.

5 BY MR. VAN HOVEN:

6 Q. I'd like to go back now to the -- the proximal -- or the
7 back-end.

8 And these instruments have to be interchanged during
9 surgery at times; right?

10 A. That's correct.

11 Q. And so they are designed to have, essentially, similar or
12 identical dimensions within the back-end housing?

13 A. That's correct.

14 Q. And so of those -- what is the approximate length of those
15 cables within the back-end housing within an Si instrument?

16 A. It's different for each joint, because the cables are --
17 basically from that point they bend around a 90-degree bend, at
18 this section here (indicating). And then they are moving to
19 each of the respective locations.

20 So these input disks have a longer length of cable than
21 this input disk, for example.

22 Q. On the Si what's, approximately, the longest cable?

23 A. Approximately two and a half inches.

24 Q. What would that be in centimeters?

25 A. So two and a half times 2.54. So that would be six and

1 three quarters, about.

2 Q. Thank you. I had to look that up. I've forgotten my
3 engineering training over time, but 2.54. Good to know.

4 MR. VAN HOVEN: Could we bring up defendant's
5 demonstratives 5.6?

6 (Document displayed.)

7 MR. VAN HOVEN: Could we focus at the top -- I'm
8 sorry, at the items labeled "Yaw Input"?

9 BY MR. VAN HOVEN:

10 Q. And what that's showing, on the left, are those the yaw
11 input disks for the Si instruments?

12 A. That's correct.

13 Q. And at the right, those are yaw input disks for Xi
14 instruments; right?

15 A. That's correct.

16 MR. VAN HOVEN: Can we go to Slide 5.6.

17 I'm sorry, 5.5.

18 And on the left side image, could you zoom in on the back
19 two items?

20 (Document displayed)

21 BY MR. VAN HOVEN:

22 Q. And what we're seeing there on the left, those are the
23 yaw -- that's the yaw input on an Si instrument; is that right?

24 A. That's correct.

25 MR. VAN HOVEN: And if you could zoom in to the -- to

1 the item next to the yellow shaft.

2 Go up a little bit. Yeah, there you go.

3 (Document enlarged)

4 **BY MR. VAN HOVEN:**

5 Q. If you look at that image, there is kind of a yellow tube
6 coming in, and then those are -- there are two -- what are the
7 two items just to the right of the yellow shaft?

8 A. Sorry?

9 Q. Yeah. So there's a yellow tube coming in from the upper
10 left and then there are the cyan wires; right?

11 A. Yeah, cables are cyan in color, yes.

12 Q. And those are -- those are coupling to pulleys, right,
13 before they go to into the -- into that tube; right?

14 A. That's correct.

15 Q. And the pulleys that you're talking about, those are the
16 two items at the exit to that tube?

17 A. Those -- that bank of pulleys we call the back-end idler
18 pulleys.

19 Q. And when you're talking about cables and pulleys in the
20 proximal housing or the back-end housing, this is what you're
21 talking about; right?

22 A. Correct.

23 **MR. VAN HOVEN:** Could we on 5.5 go to the right side
24 image?

25 (Document displayed.)

1 BY MR. VAN HOVEN:

2 Q. The top two, I guess, bluish-colored items, those are
3 where the -- those correspond to the yaw inputs of an Xi
4 instrument; is that right?

5 A. Bluish color? I question.

6 Q. Bluish greenish color.

7 A. Yes. The two on the topmost, as this picture is oriented,
8 those are the yaw inputs, correct.

9 Q. And are there red cables that extend towards sort of a
10 green-colored input point?

11 A. That's correct.

12 Q. And it's sort of hard to see, but that green item, is that
13 a pulley?

14 A. Green items on the sort of -- I can't point. On the left
15 side -- yeah, thank you -- those are what we call -- on the
16 X/Xi, those are the back-end idler pulleys.

17 Q. When you're talking about cables and pulleys in the
18 back-end housing for the yaw input of an Xi instrument, this is
19 what you're talking about; right?

20 A. Well, there are different pulleys. So we have idler
21 pulleys. We have pulleys that are part of the cap stands.

22 Q. And the cap stands are what is -- what are under the green
23 highlighted items; right?

24 A. The cap stands are part of the input disks.

25 Q. And those pulleys and wires, or cables, those are what

1 you're talking about when you're talking about the pulleys and
2 cables in the back-end housing of an Xi instrument?

3 **A.** When I talk about pulleys in the back-end, we have idler
4 pulleys, which are the green pulleys that they are making that
5 bend on the left side, the pulleys that are part of the input
6 disks, and then there are clamping pulleys which are the light
7 green components at the top of each input disk.

8 **Q.** And those items you just enumerated, those are what you're
9 talking about when you're talking about cables and pulleys in
10 the back-end housing of the -- of an Xi instrument; correct?

11 **A.** That's correct.

12 **MR. VAN HOVEN:** Could we go back to 5.6? And on the
13 right side, could we focus on what's labeled "Fifth Input"?

14 (Document displayed.)

15 **BY MR. VAN HOVEN:**

16 **Q.** This is the fifth -- this is the fifth input of an XI
17 instrument; correct?

18 **A.** That's correct.

19 **Q.** And there was no fifth input on Si instruments, was there?

20 **A.** That's correct.

21 **Q.** And this is something that you described as a major change
22 during your testimony today; right?

23 **A.** That's correct.

24 **MR. VAN HOVEN:** Could we go back to 5.5 and focus on
25 the lower right, the lower green gear?

1 (Document displayed.)

2 **BY MR. VAN HOVEN:**

3 **Q.** Is that green gear what corresponds to the fifth input?

4 **A.** No, it does not.

5 **Q.** That's the roll, isn't it?

6 **A.** That's the roll axis, correct.

7 **MR. VAN HOVEN:** Could we go to the left of that, to
8 the opposite, other side of the instrument?

9 (Document displayed.)

10 **BY MR. VAN HOVEN:**

11 **Q.** So is the fifth input depicted here?

12 **A.** You are looking at the -- that's the top of that
13 particular input, yes.

14 **Q.** The thing that's highlighted in blue?

15 **A.** Yes.

16 **Q.** That doesn't connect to any cables here, does it?

17 **A.** No, it does not.

18 **Q.** It does not connect to any pulleys here, does it?

19 **A.** Correct.

20 **MR. VAN HOVEN:** Can we publish 573-R, which has been
21 previously admitted?

22 **THE COURT:** You may.

23 **MS. PARKER:** It's in evidence. I just want to make
24 sure the witness is directed to a hard copy of the document.

25 (Document displayed.)

1 **BY MR. VAN HOVEN:**

2 **Q.** You would have one. It's either in the folders -- I think
3 it's in the folders there actually.

4 **A.** The binder?

5 **Q.** Not the binder. I think it's in the folders.

6 **THE COURT:** It's second from the end.

7 **THE WITNESS:** Second from the end.

8 **BY MR. VAN HOVEN:**

9 **Q.** Mr. Duque, you have been working with Si instruments for
10 over 15 years; right?

11 **A.** My full tenure at Intuitive.

12 **Q.** And when did you begin work related to Xi instruments?

13 **A.** So Xi instruments were released with the Xi platform in
14 2014.

15 **Q.** And did you work with Xi instruments prior to 2014?

16 **A.** I was part of an engineering staff that was working on
17 S/Si instruments specifically, but we were at -- colleagues and
18 we were involved with some of the reviews of that program.

19 **Q.** And this document is an IS4000 8-millimeter base
20 instruments CDR. Do you see that?

21 **A.** I do.

22 **Q.** Is IS4000 referring to Xi?

23 **A.** It does.

24 **Q.** And a CDR is a critical design review; right?

25 **A.** That's correct.

1 **MR. VAN HOVEN:** Could we go to Page 19 of this
2 document.

3 (Document displayed.)

4 **BY MR. VAN HOVEN:**

5 **Q.** This document, this page of the document has a disk
6 highlighted in red; is that right?

7 **A.** I see something that's highlighted --

8 **MS. PARKER:** Sorry. Counsel, just to be clear, my
9 copy is black and white, and I want to see if the witness's is
10 as well.

11 **THE WITNESS:** Mine is black and white.

12 **BY MR. VAN HOVEN:**

13 **Q.** On the screen, do you see something highlighted in red?

14 **A.** On the screen, I see something else highlighted
15 differently, yes.

16 **Q.** Would that be the fifth input that we have been talking
17 about?

18 **A.** That's correct.

19 **Q.** And that's an end-of-life indicator, isn't it?

20 **A.** For this particular instrument, for our core instruments,
21 that's the input that is associated with the end-of-life
22 indicator.

23 **Q.** And there is a motor that turns that end-of-life indicator
24 at some point in the arm?

25 **A.** There's a motor pack. So there's -- the motor pack has

1 motors at each of the five input disks.

2 **Q.** And there's one that lines up with this end-of-life
3 indicator that is the fifth input disk; right?

4 **A.** That's correct.

5 **Q.** And what that does is, when an instrument reaches the end
6 of life, it turns that end-of-life indicator; right?

7 **A.** That's correct.

8 **Q.** And a red dot shows up on the side of the instrument?

9 **A.** That's correct.

10 **Q.** And the reason for that is that users attempt to use an
11 expired instrument in one of eight procedures; right?

12 **A.** Sorry. Can you rephrase the question?

13 **Q.** Sure. I'm looking at the document describing the fifth
14 input disk. That's the end-of-life indicator. Do you see
15 that?

16 **A.** I do.

17 **Q.** At the bottom of the document, it states that [as read] :
18 "Users attempt to use an expired instrument in
19 one in eight procedures."

20 Is that right?

21 **A.** That's what I read, yes.

22 **Q.** And was that a problem that Intuitive recognized?

23 **MS. PARKER:** Objection. Vague as to time.

24 **THE COURT:** Mr. Duque, do you understand the question?

25 **THE WITNESS:** Can you rephrase the question, please?

1 BY MR. VAN HOVEN:

2 Q. Yes. Is that a problem that Intuitive recognized, users
3 attempting to use expired instruments?

4 A. My understanding is that we want to eliminate wasted time
5 in the OR. If a user attempts to use an expired instrument,
6 that's a waste of time.

7 If an instrument that's expired is reprocessed, that's
8 also a waste of time.

9 So in the context of using your time efficiently, it's
10 something that we recognize as a shortcoming, yes.

11 Q. So Intuitive recognized that in one of eight procedures, a
12 hospital thought that an EndoWrist instrument was safe to use
13 in a surgery?

14 MS. PARKER: Objection, misstates the document.

15 THE COURT: Mr. Duque, can you answer the question?

16 THE WITNESS: Can you state the question again?

17 MR. VAN HOVEN: Do you mind reading back the question?

18 (Requested portion of record read.)

19 THE WITNESS: So the part that I am having trouble
20 answering is the safe, the safe part of it.

21 BY MR. VAN HOVEN:

22 Q. Do you think hospitals would put an EndoWrist instrument
23 that they thought was unsafe to use on and try to use them in a
24 procedure?

25 A. No.

1 **MS. PARKER:** Objection, calls for speculation and
2 foundation.

3 **THE COURT:** Overruled.

4 Keep going, Mr. Van Hoven.

5 **BY MR. VAN HOVEN:**

6 **Q.** You spoke a little bit about motors in EndoWrist
7 instruments. In the instances of that fifth input, that motor
8 would just turn the end-of-life indicator; right?

9 **A.** For this instrument, yes.

10 **Q.** I would like to talk about the other four input disks for
11 a minute and their relation to those motors.

12 **A.** Okay.

13 **Q.** The motors are in the robot arms?

14 **A.** Correct.

15 **Q.** And they interface with the four functional input disks?

16 **A.** They interface with all five of the input disks.

17 **Q.** As to those four that are functional, they interface with
18 those; right?

19 **A.** They interface with all five of the disks.

20 **Q.** Are there separate motors for each disk?

21 **A.** Yes.

22 **Q.** And so for the motors, four separate motors that interface
23 with the four separate input disks, they apply a torque to
24 those input disks to cause the movements at the distal end;
25 right?

1 **A.** That's correct.

2 **Q.** And that torque corresponds to a current that's applied to
3 the motor; is that right?

4 **A.** That's correct.

5 **Q.** And that current data is something that Intuitive stores
6 in its system logs?

7 **A.** That's correct.

8 **Q.** And it's sampled at a sampling rate?

9 **A.** That's correct.

10 **Q.** And you, in fact, as an engineer who's worked at Intuitive
11 20 years, you utilize that data in your work, don't you?

12 **A.** We use it during diagnostics for failure analysis, yes.

13 **Q.** Yeah, and because that tells you what actually happened in
14 a procedure; right?

15 **A.** Not exactly.

16 **Q.** It tells you the forces that were applied during a
17 procedure; right?

18 **A.** It gives us a picture of what forces were put through the
19 instrument, yes.

20 **Q.** And that information -- it also tells you -- if you look
21 at it over the multiple lives, it tells you the entire history
22 of those forces; right?

23 **A.** If we have all that data, yes, it would give you a history
24 of all the torques and displacement.

25 **Q.** And you actually use that data to look at the history of

1 instruments in your work; don't you?

2 **A.** Case by case. For failure analysis, when we're looking at
3 a returned instrument, we do utilize that data.

4 **Q.** The use counter doesn't use any of that data, does it?

5 **A.** Sorry. Can you restate the question?

6 **Q.** Yes, the use counter doesn't incorporate any of that data
7 or information, does it?

8 **A.** The use counter -- I apologize. I'm not understanding.

9 Please restate the question again.

10 **Q.** Does the torque data get incorporated into the changing of
11 lives in a use counter in any manner?

12 **A.** No, it does not.

13 **Q.** And let's talk briefly about what the use counter does do.
14 Does a use counter count down when the instrument goes into
15 following mode?

16 **A.** So there's a point at which we count a use. And, yes,
17 what you're stating is -- when an instrument is installed, the
18 use isn't decremented until it goes into following.

19 **Q.** And following means that the instrument is inserted onto
20 the robot. That's -- well, it has to be inserted onto the
21 robot to go into following; right?

22 **A.** More than that.

23 **Q.** But that's one step. It at least has to be on the robot?

24 **A.** It at least has to be engaged on the robot arm.

25 **Q.** And then the robot arm makes a movement?

1 **A.** No. In order for the instrument to go into following, the
2 patient-side assistant has to insert the instrument through the
3 tip of the cannula.

4 **Q.** Is that the top tip of the cannula or the bottom or all
5 the way through the cannula?

6 **A.** The tip, meaning what's inside the body wall of the
7 patient.

8 **Q.** So once it's through the cannula into the patient, that's
9 another step before use count is decremented; right?

10 **A.** That's correct.

11 **Q.** And then the surgeon has to make a movement?

12 **A.** So the instrument tip has to be inserted through the tip
13 of the cannula to a certain point where it aligns with the
14 previous position of the instrument that was installed before
15 that.

16 The surgeon -- at the surgeon's console, they don't go
17 into following until they go through a series of movements of
18 the masters. And that initiates the instrument to go into that
19 following mode.

20 **Q.** So once the surgeon goes through the series of movements
21 after it's been inserted, that's when a use count is
22 decremented; correct?

23 **A.** That's correct.

24 **MR. VAN HOVEN:** Could we bring up 622?

25 And could you also scroll to the next page? Then back to

1 the first page?

2 (Document displayed.)

3 **BY MR. VAN HOVEN:**

4 **Q.** These are manufacturing process instructions that
5 Intuitive uses for Si instruments; correct?

6 **A.** That's correct.

7 **Q.** And these are the exemplar of the instruments that have
8 been used through the life of the Si instruments; is that
9 correct?

10 **A.** This is representative of that, yes.

11 **Q.** And how long is this document?

12 **A.** How long?

13 **Q.** Yeah. How many pages?

14 **A.** This is Page 1 of 2, so it's two pages.

15 **Q.** And Intuitive thinks this is adequate to train its
16 assembly technicians; correct?

17 **A.** Not by itself.

18 **Q.** But did you say you use it to train assembly technicians?

19 **A.** It's used in the training of assembly technicians. But in
20 addition to that, we have specific tech trainers that are
21 trained to train others.

22 **Q.** But this is what you put on the manufacturing floor;
23 right?

24 **A.** It's on the manufacturing floor in addition to other --
25 other documents.

1 **Q.** And this is the document -- and as you described it, this
2 document is used to define the manufacturing assembly process
3 for tensioning of cables and Si instruments?

4 **A.** It's part of it, yes.

5 **Q.** And you described this as being a manual process; correct?

6 **A.** That's correct.

7 **Q.** And Si instruments were made at least since 2008?

8 **A.** That's correct.

9 **Q.** And into the 2020s?

10 **A.** Into the 2020s, yes.

11 **Q.** And during that entire time, that was a manual process;
12 correct?

13 **A.** That's correct.

14 **Q.** And you were talking about a tensioning tool; do you
15 remember that?

16 **A.** I do.

17 **Q.** And you described, made an analogy to kind of a lug nut on
18 a tire?

19 **A.** I was comparing it to a torque wrench.

20 **Q.** Torque wrench for a -- yeah.

21 **A.** That's correct.

22 **Q.** And this tool, it's a physical tool. You attach it to
23 the -- to the pulley -- I'm sorry, to the disk location?

24 **A.** The tensioning tool, there's a feature on each of the
25 clamping pulleys on the Si instruments that accepts the tip of

1 the tensioning tool.

2 **Q.** So sort of like a torque wrench would accept a lug nut on
3 a tire?

4 **A.** A little bit different, but yes. There's a -- a mating
5 feature.

6 **Q.** And then the tool is pulled by a person?

7 **A.** The tool is rotated.

8 **Q.** By a person?

9 **A.** Correct.

10 **Q.** Did Intuitive think that using a manual process for cable
11 tensioning for the Si instruments was unsafe?

12 **A.** No. We go through an equipment validation tooling
13 qualification process that we use to validate what we're
14 intending to do.

15 So with that qualification process, we'll go through a
16 series of tests, testing that kind of the streams of the
17 process to account for variation in the assembly or the tools
18 itself. And then go through a rigorous study to make sure that
19 we are ensuring the right amount of tension is applied.

20 **Q.** So you didn't think that using this manual process for
21 over a decade was unsafe, did you?

22 **A.** No.

23 **Q.** And you didn't think that using this manual process for
24 over a decade would cause any harm to patients, did you?

25 **A.** Not at all.

1 **Q.** And hundreds of thousands, if not millions, of instruments
2 would have been tensioned using this manual process described
3 in these two-page instructions; correct?

4 **A.** That's correct.

5 **Q.** You were asked some questions about Intuitive's life
6 testing today; right?

7 **A.** Yes.

8 **MR. VAN HOVEN:** Can you bring up Trial Exhibit 574?

9 I'll try to find it, too.

10 (Brief pause.)

11 **MR. VAN HOVEN:** I may not have it in our binder, but
12 it was one of their exhibits.

13 **THE COURT:** I have it in your folder.

14 **MR. VAN HOVEN:** Okay. You do?

15 **MS. PARKER:** Mr. Van Hoven, I believe the witness
16 still has his direct binder in there, and it should be in there
17 as well.

18 **MR. VAN HOVEN:** And I just -- it's the second-to-last
19 folder.

20 Do you have it?

21 **THE WITNESS:** I found it. It was on screen for a
22 moment.

23 **MR. VAN HOVEN:** Yeah. Can you get that back on the
24 screen?

25 **THE WITNESS:** I have the hard copy in front of me.

1 **MR. VAN HOVEN:** Can we go to Section 5 of "Scope."

2 And zoom in on the last paragraph.

3 (Document displayed.)

4 **BY MR. VAN HOVEN:**

5 **Q.** And you discussed Weibull analysis this morning; right?

6 **A.** That's correct.

7 **Q.** And the 90/90 reliability and confidence and a beta of
8 five in the first sentence, those are parameters for the
9 Weibull analysis?

10 **A.** For this particular protocol, yes.

11 **Q.** And then the next sentence [as read] :

12 "The test plan provides a projected number of
13 human uses for this test article of ten."

14 Do you see that?

15 **A.** I do.

16 **Q.** The final part of that sentence says [as read] :

17 "Requiring completion of 15 life cycles."

18 Right?

19 **A.** That's correct.

20 **Q.** For this particular test, in order to meet the projected
21 number of human uses of ten, all of the instruments under test
22 would have to complete 15 life cycles; is that right?

23 **A.** That's correct.

24 **Q.** Let's say that the projected number of human uses was
25 higher than ten. Would that number of 15 have to change?

1 **A.** Yes.

2 **Q.** How would it change?

3 **A.** So the Weibull analysis, to reach that 90 percent
4 confidence, takes into account the test size, the sample size.
5 And that's four here.

6 So if you wanted to qualify a larger number or something
7 more than ten, the required completion cycles would go up as
8 well.

9 **Q.** So you'd have to do a different test than what Intuitive
10 did here; right?

11 **A.** Yes.

12 **Q.** The next sentence starts with [as read] :

13 "The actual production number of human uses for
14 the test article."

15 Do you see that?

16 **A.** I do.

17 **Q.** What is an actual production number of human uses for the
18 test article? What is that referring to?

19 **A.** So production number of human uses for the test article,
20 the actual number, I'm reading it, I read that as what we
21 programmed the instruments with.

22 **Q.** Are you aware of any instance where the actual production
23 number of human uses for the test article hasn't been the
24 projected number of ten?

25 **A.** Yes.

1 **Q.** That would be for the Extended Use Program?

2 **A.** That's one example, yes.

3 **MR. VAN HOVEN:** I'd like to go to -- and, actually,
4 this is one of the exhibits with the redaction, 572-R.

5 Any objection?

6 **MS. PARKER:** 572 is already admitted without
7 redaction.

8 **MR. VAN HOVEN:** Can we bring up 572?

9 **THE COURT:** Mr. Van Hoven, can you tell us, is it in a
10 folder or the binder?

11 **MR. VAN HOVEN:** Yes, it's in the binder, 572.

12 **THE COURT:** I've got it.

13 Do you have it?

14 **THE WITNESS:** It's in the binder? One of the white
15 binders?

16 **THE COURT:** Take mine.

17 (Whereupon exhibit binder was tendered to the
18 witness.)

19 **THE WITNESS:** Thank you.

20 **MR. VAN HOVEN:** Can we zoom in on the top portion of
21 this document?

22 (Document displayed)

23 **BY MR. VAN HOVEN:**

24 **Q.** Do you see that you were the approval person for design
25 engineering?

1 A. That's correct.

2 Q. And just go back to the main document now.

3 The last document we were looking at, that was how the
4 tests are set up; correct? That's the test procedure?

5 A. The last document that we were looking at?

6 Q. Yeah. That was the test procedure?

7 A. It was a full protocol.

8 Q. And this is showing the results of one of those test
9 procedures; correct?

10 **MS. PARKER:** Objection, mischaracterizes the document.

11 **THE COURT:** Mr. Duque, can you answer Mr. Van Hoven's
12 question?

13 **THE WITNESS:** Sure.

14 Can you ask the question one more time?

15 **BY MR. VAN HOVEN:**

16 Q. Yes. This is showing the results of the tests that were
17 performed according to some test protocol; correct?

18 A. This is a report of -- which includes the results of
19 executing a protocol, yes.

20 Q. So this is the output of performing one of those
21 protocols; is that fair?

22 A. That's correct.

23 **MR. VAN HOVEN:** Can we go to the "Test Summary"
24 section, number six, and focus on that last paragraph?

1 BY MR. VAN HOVEN:

2 Q. Do you see that this in the third sentence discusses
3 Weibull design of reliability analysis?

4 A. I see that, yes.

5 Q. And those would be the Weibull parameters that set the
6 number of units you have to use to meet your target?

7 A. That's correct.

8 Q. And this is an example of where there's a target of ten
9 lives; is that right?

10 A. Yes. We were -- this protocol is for a change to an
11 existing device that was already available. And so we are
12 executing this protocol to ensure that we were still meeting
13 the existing device's requirements.

14 Q. The ten that you had all along; right?

15 A. Correct. We're proving equivalence.

16 Q. And so in here, there was a testing to 13 uses without
17 failures?

18 A. I see that, yes.

19 Q. And that's what you need to meet the ten; right?

20 A. Correct. Taking into account the sample size and the
21 target of 90 percent in confidence and reliability.

22 And I'll add that included in that Weibull statement is
23 that we are taking the beta of five.

24 Q. And then once you met your target of ten, you didn't test
25 more than that; right?

1 **A.** We were just proving equivalence to an existing product.
2 So we stopped testing there.

3 **Q.** When you met your target of ten, you stopped testing?

4 **A.** When we met our requisite confidence and reliability for
5 ten, yes.

6 **Q.** You mentioned earlier that in 2001 the devices were very
7 new. Do you remember that?

8 **A.** I do.

9 **Q.** And that's one reason that you thought ten uses was
10 appropriate at that time?

11 **A.** The ten uses were preexisting to me, yes.

12 **Q.** But that the devices were very new, that's one reason that
13 you thought ten uses was appropriate at that time; right?

14 **A.** I thought the ten uses was a high bar, a challenge for me
15 and the team that I was on.

16 **Q.** As of 2020, were Si devices new?

17 **A.** No.

18 **Q.** They were at least 12 years old; right?

19 **A.** Si instruments were released -- Si instruments are S
20 instruments also. So they would have been in existence since
21 2005.

22 **MR. VAN HOVEN:** I'd like to bring up Trial
23 Exhibit 462.

24 Is there any objection?

25 **MS. PARKER:** Can you please tell me which of the piles

1 that's in?

2 **MR. VAN HOVEN:** Sure. It's in this binder
3 (indicating), third -- I'm sorry, sixth tab.

4 **MS. PARKER:** Are you seeking to admit 462-R?

5 **MR. VAN HOVEN:** I'll get to this later.

6 **A.** 462?

7 **BY MR. VAN HOVEN:**

8 **Q.** I'm sorry about that, Mr. Duque. I had the wrong exhibit
9 there.

10 You talked a little bit this morning about informal
11 testing; is that right?

12 **A.** That's correct.

13 **Q.** And you talked about formal testing?

14 **A.** That's correct.

15 **Q.** At some point, you became aware of third-party instruments
16 that were changing the use counter; is that right?

17 **A.** I became aware of some instruments that had been modified.

18 **Q.** Changed the use counter?

19 **A.** They are modified. That's my initial impression of them.

20 But what actually happened, I don't know all of the
21 details to it, but they had been modified or changed.

22 **Q.** And you knew that Intuitive was in possession of a number
23 of those instruments?

24 **A.** That's correct.

25 **Q.** But all you knew about them was through what you heard

1 through the RMA process; correct?

2 **A.** Yeah, they came through the RMA process because they had
3 failed in some way. And so they showed up with our FA team,
4 our failure analysis team, that were looking at the returned
5 instrument.

6 **Q.** But that's the extent of your analysis, is what the RMA
7 team did?

8 **A.** I was provided an instrument, so I did look at one
9 physically at the very beginning. Then I had some pictures of
10 the instruments or samples of those instruments from the FA and
11 RMA teams.

12 **Q.** The -- but you didn't perform any informal testing on
13 those instruments, did you?

14 **A.** The instruments were -- came through the RMA loop so they
15 were already non-functional. So I couldn't test them.

16 **Q.** You didn't perform any testing; correct?

17 **A.** I did not do any testing on them.

18 **Q.** Are you -- so you talked about that RMA process.

19 Are you familiar with -- so you're familiar that
20 instruments come in from hospitals?

21 **A.** I am.

22 **Q.** And literally hundreds of thousands have come back to
23 Intuitive over the years; right?

24 **A.** Cumulatively, yes. Yes.

25 **Q.** And are you aware there's a team at Intuitive that looks

1 at those instruments?

2 **MS. PARKER:** Objection, scope, Your Honor. The
3 witness wasn't asked about the RMA process on direct
4 examination.

5 **THE COURT:** Sustained. I think that's right,
6 Mr. Van Hoven.

7 **BY MR. VAN HOVEN:**

8 **Q.** You spoke about the Extended Use Program this morning?

9 **A.** That's correct.

10 **Q.** The Extended Use Program was implemented on a subset of Xi
11 instruments; correct?

12 **A.** That's correct.

13 **Q.** It was not implemented on any Si instruments?

14 **A.** That's correct.

15 **Q.** The program started in 2019?

16 **A.** That's correct.

17 **Q.** That was about the same time that you became aware of
18 third-party modified instruments?

19 **A.** Not -- not correct.

20 **Q.** What's the relative timing between those events?

21 **A.** I became aware of it several years before, 2016-ish.

22 **Q.** And the Extended Use Program only came after that; right?

23 **A.** We started discussing it in 2018.

24 **MR. VAN HOVEN:** I believe there are no objections to
25 Trial Exhibit 282?

1 **MS. PARKER:** No objection.

2 **THE COURT:** It's admitted.

3 (Trial Exhibit 282 received in evidence)

4 **THE COURT:** Would you like to publish it,

5 Mr. Van Hoven?

6 **MR. VAN HOVEN:** Yes. Can we publish 282?

7 **THE COURT:** You may.

8 **MS. PARKER:** I'm sorry, counsel. Can you direct the
9 witness where to find his hard copy?

10 (Document displayed.)

11 **MR. VAN HOVEN:** It's in the fifth tab of your binder,
12 of the larger binder.

13 **THE WITNESS:** Thank you.

14 **THE COURT:** Mr. Van Hoven, will Mr. Duque need the
15 EndoWrists again?

16 **MR. VAN HOVEN:** No.

17 **THE COURT:** Can we pass those back to you? It will
18 give him a little more room up there.

19 **THE WITNESS:** Thank you.

20 (Whereupon exhibits were returned to counsel.)

21 **BY MR. VAN HOVEN:**

22 **Q.** Do you see the title of this, "Quality Review Board"?

23 **A.** I do.

24 **Q.** The Quality Review Board meets quarterly?

25 **A.** That's correct.

1 Q. And they look at RMA and other data representing,
2 essentially, the quality of the instruments?

3 A. Yeah. RMA is one metric that we look at, yes.

4 **MR. VAN HOVEN:** Can we go to Slide 2 of this
5 presentation and highlight the upper portion?

6 Can we focus on the bottom or "X" axis of that?

7 (Document displayed)

8 **BY MR. VAN HOVEN:**

9 Q. So the "X" axis or the bottom of this slide is saying 2016
10 Q2 through 2018 Q4. Do you see that?

11 A. I do.

12 Q. So that would be the time period that the RMA data -- or
13 that this is being considered for, that's being presented?

14 A. For this graph I'll assume, yes.

15 **MR. VAN HOVEN:** If we could look at the "Y" axis.

16 And can you make sure you show the language at the top as
17 well, above that axis?

18 **BY MR. VAN HOVEN:**

19 Q. So this is a percentage of RMAs; is that right?

20 A. This is the RMA rate.

21 Q. Per procedure?

22 A. That's correct.

23 Q. So what percentage of procedures an Intuitive instrument
24 has a RMA?

25 A. That's correct.

1 Q. Or, as you described it, a failure that comes back to your
2 RMA team?

3 A. That's correct.

4 **MR. VAN HOVEN:** And could we go to the upper right?
5 There's some language that says "Model?"

6 **BY MR. VAN HOVEN:**

7 Q. And it should be pretty clear. But as we discussed this,
8 there is a green label for the da Vinci Si and a red label for
9 da Vinci Xi?

10 A. I see that, yes.

11 Q. And so when we look at this and we see a red plot, that
12 would show the number of failures of -- that come back to
13 Intuitive for da Vinci Xi?

14 A. Well, we're talking about rates per procedure.

15 Q. Yes. But that's what we would see for Xi?

16 A. For both Xi and Si.

17 Q. The red -- but when we look at the plots, the red one will
18 be Xi; correct?

19 A. That's correct.

20 Q. The green one will be Si; correct?

21 A. That's correct.

22 **MR. VAN HOVEN:** Could we now show the plots?

23 (Document displayed)

24 **BY MR. VAN HOVEN:**

25 Q. And you testified a minute ago that you started the

1 Extended Use Program and looking into it in 2018?

2 **A.** We started talking about it at the end of 2018. Not by
3 coincidence, it coincided with reducing trend in our RMA rate.
4 My team had been working on making improvements to the X/Xi
5 platform over the course of several years, starting way back in
6 2014. And we were encouraged by the reduction in RMA rates.

7 As you can see here, from 2017 Q2 to 2018 Q4, the -- there
8 was a significant downward trend. So we started to become more
9 confident.

10 **Q.** You testified a minute ago that you -- that Intuitive
11 started looking into the Extended Use Program in 2018; correct?

12 **A.** We started talking about it in 2018, at the end of 2018.

13 **Q.** And this has data all the way through the end of 2018;
14 correct?

15 **A.** It does.

16 **Q.** Does it appear that the Xi had a significantly higher
17 failure rate than the Si during this entire time period?

18 **MS. PARKER:** Objection, form.

19 **THE COURT:** Mr. Duque, do you understand that
20 question?

21 **THE WITNESS:** I understand it as comparing the RMA
22 rate between X/Xi versus the S/Si.

23 **THE COURT:** Overruled.

24 Please answer it.

25 **A.** So there was a difference that X/Xi has more -- has a

1 higher RMA rate than the S/Si. But as I was mentioning
2 earlier, the RMA rate for X/Xi was trending downward
3 significantly over the time period between 2017 and the end of
4 2018.

5 **BY MR. VAN HOVEN:**

6 **Q.** And during that entire time period, it was significantly
7 higher than Si; right?

8 **A.** It was higher, but reducing that difference.

9 **Q.** It was getting closer to what Si had; right?

10 **A.** That's correct.

11 **Q.** And as you said, you were talking about the Extended Use
12 Program in late 2018.

13 **MR. VAN HOVEN:** Could you bring up the box on the
14 right that shows 2018 Q4?

15 (Document displayed)

16 **BY MR. VAN HOVEN:**

17 **Q.** And so this would have been the RMA data that you had
18 available to you when Intuitive was considering the Extended
19 Use Program in late 2018?

20 **A.** We are tracking to a goal of being below 2 percent for
21 X/Xi.

22 **Q.** This is the data you would have had available to you in
23 late 2018 when Intuitive was talking about the Extended Use
24 Program?

25 **A.** This and other data, yes.

1 Q. And this -- and as of 2018 Q4, that was 2.23 percent for
2 the X/Xi; right?

3 A. That's correct.

4 Q. 1.37 for the S/Si; right?

5 A. That's correct.

6 Q. I want to do this preemptively.

7 Could you look at the second folder, Mr. Duque, of this
8 461?

9 (Witness complied.)

10 MR. VAN HOVEN: I don't think this has been objected
11 to.

12 MS. PARKER: No objection, Your Honor.

13 THE COURT: Thank you. It's admitted.

14 (Trial Exhibit 461 received in evidence).

15 MR. VAN HOVEN: Publish the first page.

16 THE COURT: Please do.

17 (Document displayed.)

18 BY MR. VAN HOVEN:

19 Q. Do you see this as a da Vinci Si Instrument and Accessory
20 Catalog?

21 A. I do.

22 Q. From March of 2020?

23 A. I do.

24 Q. So this would have been at least a decade after Si
25 initially launched?

1 **A.** That's correct.

2 **Q.** It wasn't a new product then, was it?

3 **A.** No.

4 **MR. VAN HOVEN:** If we go to Page 2 and highlight on
5 the left side the top two or three sets of...

6 **BY MR. VAN HOVEN:**

7 **Q.** And so this is a catalog, and it's showing a variety of
8 EndoWrist instruments; correct?

9 **A.** That's correct.

10 **Q.** And about how many Si EndoWrist instruments were there as
11 of 2020?

12 **A.** I don't know offhand.

13 **Q.** More than 20?

14 **A.** I'm actually not sure.

15 **Q.** I guess let's just look at the instruments quickly, then.

16 **MR. VAN HOVEN:** If we go to Page 3 of the document,
17 okay, show the top portion.

18 Page 4. Okay.

19 (Document displayed)

20 **BY MR. VAN HOVEN:**

21 **Q.** So these are -- these are examples of Si instruments that
22 were offered for sale by Intuitive as of 2020; right?

23 **A.** That's correct.

24 **Q.** And each of those had only ten uses?

25 **A.** That's correct.

1 Q. The same ten uses it had during its entire life from when
2 it was new to over a decade later?

3 A. That's correct.

4 Q. Could we go to the next set of EndoWrist instruments below
5 that?

6 These are EndoWrist instruments that Intuitive is offering
7 for sale in 2020; correct?

8 A. That's correct.

9 Q. Each of these has only ten uses available to it?

10 A. That's correct.

11 Q. And it's the same ten uses that it had from when it was
12 new in the 2000s to 2020; correct?

13 A. That's correct.

14 Q. And I prefer not to go through the rest of the catalog,
15 but can you confirm with me that at least most of the
16 instruments in there still have ten uses as their use limit?

17 A. That's correct.

18 **MR. VAN HOVEN:** I'd like to bring up Trial
19 Exhibit 650.

20 The binder, the larger binder.

21 **MS. PARKER:** Sorry, counsel. What number?

22 **MR. VAN HOVEN:** 650.

23 Any objection?

24 **MS. PARKER:** No objection.

25 **THE COURT:** It's admitted.

1 (Trial Exhibit 650 received in evidence).

2 **MR. VAN HOVEN:** May we publish it?

3 **THE COURT:** You may.

4 (Document displayed.)

5 **MR. VAN HOVEN:** And I guess let's start at the
6 top-level email, sender, et cetera information.

7 **BY MR. VAN HOVEN:**

8 **Q.** And do you see that this is an email chain between you,
9 Nicky Goodson, Disha Peswani, and Tim Limon?

10 **A.** I do.

11 **Q.** And you're discussing the Extended Use Program?

12 **A.** That's correct.

13 **Q.** As of this date, June 12, 2019, Intuitive is no longer
14 just talking about the Extended Use Program; they were working
15 on it?

16 **A.** We are planning for execution of the testing for the EUP
17 program.

18 **Q.** This is a little less than six months after the RMA data
19 that we were looking at from Q4 of 2018?

20 **A.** That's correct.

21 **Q.** We'll start working chronologically up the email chain.
22 I'd like to go to the bottom email from Bob DeSantis.

23 And you can see there that Bob DeSantis emails a number of
24 people, including you, and asks Disha [as read]:

25 "Can you provide an update on the Extended Core

1 Instrument Life Program?"

2 Do you see that?

3 **A.** I do.

4 **Q.** So Bob DeSantis was very interested in that program in
5 June of 2019; right?

6 **MS. PARKER:** Objection. Speculation.

7 **THE COURT:** Sustained.

8 **BY MR. VAN HOVEN:**

9 **Q.** What was Bob DeSantis' role at Intuitive as of June 2019?

10 **A.** I'm reading it. It says "GM and Senior V.P. for
11 Instruments and Accessories."

12 **Q.** I guess as an GM and Senior V.P. of Instruments and
13 Accessories, what sort of -- what's his authority in the
14 organization, if you know?

15 **A.** So all of instruments and accessories reported in to Bob
16 DeSantis, including the design engineering teams.

17 **Q.** And sales?

18 **A.** GM, I'll say that that's operational side and sales side
19 as well.

20 **Q.** So Bob DeSantis was the guy in charge of the EndoWrist
21 business; right?

22 **A.** Instruments and accessories, that includes EndoWrists,
23 yes.

24 **Q.** If we go up to the next email in the chain from Disha
25 Peswani. And you can see below she provides an update to

1 Mr. DeSantis. She says [as read] :

2 "Below is the update on the Instrument Life
3 Extension Project."

4 **A.** I see that, yes.

5 **Q.** I don't want to belabor every email in the chain. So if
6 we go up to the next one, Mr. DeSantis responds that he's
7 interested in the overall project plan?

8 **A.** I see that, yes.

9 **Q.** He wants to know when these tasks will be complete?

10 **A.** I see that, yes.

11 **Q.** And he assumes we're running to failure and will
12 statistically back in what our life qualification is; right?

13 **A.** Yes, that's correct.

14 **Q.** You see that was the assumption of the person who was in
15 charge of the EndoWrist business?

16 **A.** I do. That's what I'm reading here, yes.

17 **Q.** If we go up to the next email in the chain, this one from
18 Nicky Goodson addressing you.

19 In responding to Mr. DeSantis' email, assuming we're
20 running to failure and statistically backing in, does
21 Ms. Goodson say to you that [as read] :

22 "Prograsp will be mid to high twenties."

23 **A.** I'm reading that is correct, yes.

24 **Q.** And she also says that FBF and Cadiere will be early
25 twenties?

1 **A.** I see that, yes.

2 **Q.** And MSCND will be high teens?

3 **A.** I see that, yes.

4 **Q.** That's what she sent to you?

5 **A.** That's correct.

6 **MR. VAN HOVEN:** Can we go back up to the next email in
7 the chain?

8 **BY MR. VAN HOVEN:**

9 **Q.** And here you're responding to Nicky's estimates; right?

10 **A.** That's correct.

11 **Q.** But before you do, Disha caught you in the aisle?

12 **A.** Yes, I see that.

13 **Q.** And so you gave numbers of cold graspers 15 lives; right?

14 **A.** That's correct.

15 **Q.** You gave numbers of bipolars 12 lives; right?

16 **A.** Correct.

17 **Q.** And you gave numbers of needle drivers 15 lives; right?

18 **A.** That's correct.

19 **MR. VAN HOVEN:** Can we go to the next email in the
20 chain?

21 **BY MR. VAN HOVEN:**

22 **Q.** Here Nicky feels the need to clarify or confirm your
23 response; right?

24 **MS. PARKER:** Objection, foundation.

25 **THE COURT:** Overruled.

1 **A.** Can you repeat the question, please?

2 **BY MR. VAN HOVEN:**

3 **Q.** Yeah. Here Nicky feels the need to clarify/confirm your
4 response; right?

5 **A.** That's right. I see that.

6 **Q.** She says [as read] :

7 "I know how many lives we test for life testing,
8 but we typically don't get failures in life testing."

9 Right?

10 **A.** I see that, yes.

11 **Q.** Her clarification, she's asking [as read] :

12 "How many lives do we anticipate the instruments
13 completely failing?"

14 Right?

15 **A.** Yes. She's speaking in terms of -- Nicky Goodson was
16 responsible for the test engineers and the test technicians.
17 So she wanted to understand how much of our resources, how much
18 of our lab time would be required for projecting the schedule.

19 **Q.** That's not what she said here, is it?

20 **A.** She says -- she's stating [as read] :

21 "I'm asking how many lives do we anticipate the
22 instruments completely failing."

23 **Q.** That's what she said; right?

24 **A.** It is.

25 **Q.** And then she asks you [as read] :

1 "Are those the same numbers below?"

2 Correct?

3 A. "Are those the same numbers below?"

4 Yes.

5 **MR. VAN HOVEN:** And then let's go to the top email in
6 the chain.

7 **BY MR. VAN HOVEN:**

8 Q. In response to that question, you state that her original
9 estimates were more likely?

10 A. I state that, yes.

11 Q. And for Prograsp and Cadiere, you expect mid-twenties?

12 A. That's correct.

13 Q. For MSCND, you expect low twenties?

14 A. Correct.

15 Q. And FBF and LND, you expect high teens?

16 A. That's correct. And this is for her project planning or
17 resource planning. She was trying to understand how long it
18 would take for all of the test units to fail.

19 As I mentioned before, when we're doing life testing, they
20 don't all fail at once. Some may fail early. Some may fail
21 kind of in that middle. And some may fail late.

22 And to answer her question for resource planning, I wanted
23 to cover if we tested all of the test units, all 22 or however
24 many test samples we were using, to test all of them, each of
25 them to failure, how far would they have to go? How many

1 resources would they have to plan for.

2 **MR. VAN HOVEN:** Can we go down to the email below?

3 **BY MR. VAN HOVEN:**

4 **Q.** She didn't say any of that in this email, did she?

5 **A.** She didn't say it, but I understood what her -- in the
6 context of what she's asking, I understood what she was needing
7 for her resource planning.

8 **Q.** What she said was [as read] :

9 "We typically don't get failures in life
10 testing."

11 That's what she said; right?

12 **A.** She's referring to previous life testing that we performed
13 prior to the EUP testing.

14 **Q.** Yeah, for the 20 years of Intuitive's life testing; right?

15 **MS. PARKER:** Objection. Form.

16 **THE COURT:** Sustained.

17 Mr. Van Hoven, if you're moving away from this email, I
18 might suggest this is a good time to take a break.

19 Members of the jury, we're going to come back at 11:05. I
20 remind you not to discuss the case with anyone and not to do
21 any research.

22 All rise for the jury, please.

23 (Whereupon there was a recess in the proceedings
24 from 10:55 a.m. until 11:08 a.m.)

25 (Proceedings held in open court, outside

1 the presence and hearing of the jury.)

2 **THE COURT:** Mr. Duque, can I ask you to step out,
3 please. I'm asking Mr. Duque to step out so I can chat with
4 you all a little bit more about -- plan the rest of our day.
5 We should probably have done that before, but I want to err on
6 the side of caution at this point.

7 (Witness steps out.)

8 **THE COURT:** All right. So I figure we're getting the
9 jury back in here at 11:15 or so.

10 We talked, Mr. McCaulley, about you having over lunch, but
11 I'm starting to -- I'm starting to think the way this is going,
12 you may not yet have had the testimony from -- from Dr. Smith.

13 So I just want to think about this so I can plan out when
14 to -- whether we are trying to stretch a little longer or --
15 yeah, where are we?

16 **MR. VAN HOVEN:** As to Mr. Duque, there's not much
17 more.

18 **THE COURT:** Okay.

19 **MR. GALLO:** And the redirect is going to be very
20 short. So Mr. Duque ought to be done very soon.

21 **THE COURT:** Okay. Thank you.

22 Maybe you all are just putting my mind at ease. This
23 is -- it's probably too early to ask you, Mr. Gallo, and you
24 can, in fact, push off the question. Have you made any
25 decisions about Dr. Howe?

1 **MR. GALLO:** Yes. We're not going to call Dr. Howe.
2 So Dr. Smith will go next. And if he were on -- I think he's
3 an hour or less. So if he goes on 11:20, 11:30 it should be no
4 problem.

5 **THE COURT:** Sound good?

6 **MR. McCARLLEY:** Sounds good.

7 **THE COURT:** Thank you, both.

8 I wanted to figure out when and where I'm sending the --
9 not where, where in the break I'm sending the jury for lunch.

10 All right. I'm going to go ahead and bring them back in.

11 Could someone please get Mr. Duque.

12 (Mr. Duque enters the courtroom.)

13 (Jury enters the courtroom at 11:12 a.m.)

14 **THE COURT:** You may be seated.

15 The floor is yours, Mr. Van Hoven.

16 **BY MR. VAN HOVEN:**

17 **Q.** Mr. Duque, I would like to ask you a few more questions
18 about the Extended Use Program, okay?

19 **A.** Okay.

20 **Q.** Sometime in fall of 2000, there was a switchover to
21 actually implementing extended use to customers?

22 **A.** Sorry, fall of 2000?

23 **Q.** Sorry, 2020.

24 **A.** 2020?

25 **Q.** Yeah.

1 **A.** Yes.

2 **Q.** And at that point, as for those EndoWrist instruments, did
3 all instruments have the increased number of uses?

4 **MS. PARKER:** Objection, form.

5 **MR. VAN HOVEN:** That's a good objection. I'll ask a
6 better question.

7 **BY MR. VAN HOVEN:**

8 **Q.** As for new instruments that were sold after that
9 switchover time, as to those models that were within the
10 Extended Use Program, did they all have the increased number of
11 lives?

12 **A.** The EUP portfolio, they had increased lives, but they were
13 different numbers for different families of instruments.

14 **Q.** Right. But you couldn't get a unit with the old number of
15 lives; is that right?

16 **A.** I'm sorry?

17 **Q.** You couldn't buy a new unit with the old number of lives
18 after that switchover?

19 **A.** Eventually we moved all of our production over to the new
20 EUP program instruments. But there was some transition time.

21 **Q.** And you -- I think you noted that there was a select set
22 of instruments that were in the EUP program?

23 **A.** That's correct.

24 **Q.** Could you look at Exhibit 1407. It's in the binder, I
25 think second one from the back.

1 **MR. VAN HOVEN:** Any objection to 1407?

2 **MS. PARKER:** Just a moment, please.

3 (Brief pause.)

4 **MS. PARKER:** He needs to lay a foundation with this
5 witness with this particular document.

6 **BY MR. VAN HOVEN:**

7 **Q.** Mr. Duque, have you seen a document like this before?

8 **MS. PARKER:** Objection, form. It should be: Has he
9 seen this document before?

10 **BY MR. VAN HOVEN:**

11 **Q.** Have you seen this document before, Mr. Duque?

12 **A.** This looks familiar to me.

13 **Q.** And is this the sort of document that you would consult
14 during your -- what you do in your job?

15 **A.** I'm aware of the document. I don't necessarily consult
16 or -- I don't author. I'm not the owner of these types of
17 documents.

18 **Q.** You're not -- you're not the owner of this document, but
19 this is a document you've seen?

20 **A.** Something similar at least, yes.

21 **MR. VAN HOVEN:** Move to admit Exhibit 1407.

22 **MS. PARKER:** Your Honor, I don't think that
23 establishes foundation, that the witness has seen a similar
24 document but doesn't use it in the course of his job and hasn't
25 offered it.

1 **THE COURT:** Do you have more to offer, Mr. Van Hoven,
2 on this?

3 I'll sustain it for now. Do you have more to ask
4 Mr. Duque about this document to help?

5 **MR. VAN HOVEN:** I was just hoping to discuss the
6 instruments, but I can discuss it without the document.

7 **BY MR. VAN HOVEN:**

8 **Q.** Some of the instruments that -- as you said, only a
9 limited subset of the instruments received were in the EUP
10 program?

11 **A.** That's correct. The instruments that were tested or in
12 the scope of the testing.

13 **Q.** Also, you can close that document so you're not referring
14 to it, because I don't -- because it's not admitted. But the
15 rest of the instruments, those stayed with the ten lives that
16 were not in the EUP program?

17 **A.** That's correct.

18 **Q.** And were there price changes to the instruments that were
19 in the EUP program?

20 **A.** The -- there were, yes.

21 **Q.** And a number of those instruments, the prices increased;
22 correct?

23 **A.** The cost-per-use was actually reduced.

24 **Q.** But the cost that the hospital paid, that increased;
25 right?

1 **A.** The cost of the individual instrument increased, but they
2 were rated for a higher number of lives. So the result of that
3 was that the price-per-use was much lower.

4 **Q.** And -- but the hospital, the price they paid went up on a
5 number of those instruments; right?

6 **A.** For the individual units, yes.

7 **Q.** And let's just talk about, as for example, Prograsp. That
8 was an EUP instrument; right?

9 **A.** That's correct.

10 **Q.** And at some point, something in manufacturing changed from
11 when it was pre-EUP launch and post-EUP launch; right?

12 **A.** That's correct.

13 **Q.** What changed from pre-EUP launch to post-EUP launch, kind
14 of that short time period?

15 **A.** So the EUP instruments, they had a different base number.
16 So we had to introduce them as a new SKU.

17 At the initial launch, we offered both the pre-existing
18 Prograsp, which had a 470 base point number, and then the EUP
19 version. And they had to coexist. So they had different part
20 numbers.

21 Because we had different part numbers as well as different
22 life numbers, what gets programmed on the RFID chips also
23 differed. It had a different part number associated with it.
24 It had a different use rating programmed onto the RFID chip.

25 **Q.** But those were the changes that were made pre-EUP launch

1 to post-EUP launch, in that time period; correct?

2 **A.** That's correct.

3 **Q.** But there are no design changes during that time period?

4 **A.** Not for the Prograsp instrument.

5 **Q.** But Intuitive did raise the price it charged to hospitals;
6 correct?

7 **A.** Again, their price-per-use went down. The price per the
8 individual SKU did go up.

9 **Q.** So, but as far as that price change, the changes in that
10 time period were changing a part number and changing the use
11 count; right?

12 **A.** Sorry. Can you state that again?

13 **Q.** Yeah. During that time period, the changes were changing
14 the part number and changing the use count; correct?

15 **A.** There are changes to what we program onto the instrument
16 based on the results of the EUP reliability testing.

17 **Q.** And the price that hospitals paid increased after that;
18 right?

19 **A.** Again, they pay a different price. That increased for the
20 instrument. But the instrument was rated for a higher life,
21 which results in lower cost per use.

22 **MR. VAN HOVEN:** No further questions.

23 **THE COURT:** Thank you, Mr. Van Hoven.

24 **MS. PARKER:** I just have a few questions, Your Honor.

25 **THE COURT:** By all means, Ms. Parker.

REDIRECT EXAMINATION

BY MS. PARKER:

Q. Hello, Mr. Duque.

A. Hello.

Q. Mr. Duque, you were asked some questions by counsel, and he showed you a chart about RMA data of S and Si instruments versus X and Xi instruments.

Do you recall that?

A. I do.

Q. And you were asked some questions about how even though at the late 2018 time frame the RMA numbers were higher for X and Xi instruments, those are the ones that you pursued for extended use.

Do you recall that?

A. That's correct.

Q. Why, if there was still a difference in RMA data, did your team focus on X and Xi instruments for extended use?

A. Sure. So looking at that chart, the RMA rate was actually reducing significantly. And that was a result of all the various changes that members of my team and others had been implementing over the course of several years.

We are starting to see the fruits of our labor and we could see that the trajectory was getting us down to the point where we are at parity with the S/Si below two percent and even lower.

1 The focus on EUP instruments on Xi instruments was because
2 we were trying to make the most impact. And at the time, X/Xi
3 instruments, those were more in use. There were more of those
4 that were being used on a daily basis.

5 **Q.** And counsel was just asking you about some issues related
6 to cost of extended use instruments.

7 Do you recall that?

8 **A.** I do.

9 **Q.** And you said a number of times that the cost-per-use of
10 the extended use instruments went down.

11 Do you recall that?

12 **A.** I do.

13 **Q.** What do you mean by that?

14 **A.** So the cost-per-use -- so as the example. If an
15 instrument is rated for ten lives and it cost \$2,000, the
16 cost-per-use would be \$200. So every time they use it, it cost
17 them \$200.

18 When we increased the number of lives, we did increase the
19 per-unit cost; but the cost-per-use for Prograsp, as the
20 example, 18 divided by that higher number that we sold it for,
21 it was significantly less \$200 per use.

22 **Q.** And counsel asked you some questions about changes to
23 manufacturing for extended use products.

24 Do you recall that?

25 **A.** I do.

1 **Q.** And I think he asked you some questions about changing the
2 SKU and some data that was programmed on the chip.

3 Do you recall that?

4 **A.** I do.

5 **Q.** And if it were suggested that all that went into making
6 our extended use instruments was changing the SKU and changing
7 a little bit of data on the chip, would you agree or disagree
8 with that?

9 **A.** I would disagree.

10 **Q.** Why is that, sir?

11 **A.** Again, I mean, that's only after all of the V&V testing
12 was completed. We can't just sell a product with an arbitrary
13 number of uses. We have to qualify it.

14 And so it's -- in order to get to that point where we can
15 reprogram them and sell them for a higher number of uses, we
16 have to do all of that V&V testing.

17 **Q.** Sir, counsel asked you some questions about that --

18 **MS. PARKER:** And, Mr. Lee, if we can put it on the
19 screen, Exhibit 622.

20 (Document displayed.)

21 **BY MS. PARKER:**

22 **Q.** I think if you still have your smaller binder I gave you
23 at the beginning of the declaration, I think it's still in
24 there.

25 Mr. Duque, counsel asked you some questions about this

1 manufacturing process instruction document.

2 Do you recall that?

3 **A.** I do.

4 **Q.** And I just want to be clear, and I -- for the jury. This
5 two-page document, is that the only instruction that we give
6 our technicians on how to tension our cables?

7 **A.** No.

8 **Q.** Can you just explain for a moment what other types of
9 instructions are given?

10 **A.** Sure. I mean, this is kind of a high-level cover. We
11 have video of the manufacturing process that we use to train
12 our technicians.

13 The trainers are specifically trained to understand all of
14 the processes. There's a lot here that is in the actual
15 process. For example, six would say [as read]:

16 "Insert the cable tensioning tool into the
17 tensioning hole on the clamping pulley. While holding
18 the tensioning tool in one hand, loosen both screws on
19 the pulley until the pulley turns freely on the input
20 shaft."

21 There is an actual sequence that has to take place. It's
22 more than just what's written here. And they learn that
23 through the trainer when they are using this tension tool,
24 there is a sequence that they have to maintain.

25 When they are rotating the tensioning tool, they actually

1 have to rotate it past the indicators. And then slowly come
2 back down to the demarcations on the tension tool. And that's
3 done purposefully, because you want to tension higher and then
4 reduce the tension to the calibration target.

5 If you did it the other way, there's some constructional
6 stretch in the cables that wouldn't be taken out.

7 We described the cables. It's a makeup of over 200
8 individual filaments. There's interstitial space in there, and
9 that interstitial space, that's causing stretch.

10 And so the reason why we tension higher and then come back
11 down is to kind of take out all of that space so that we can
12 tension it in a reliable and repeatable fashion.

13 Sorry. That was a long example.

14 **Q.** No, I appreciate it. Thank you, sir.

15 Counsel asked you a few questions about a -- whether you
16 had seen any EndoWrists that had been hacked by third parties.

17 Do you recall that?

18 **A.** I do.

19 **Q.** And you mentioned, I believe, that you saw a device in
20 person as well as photographs; is that correct?

21 **A.** That's correct.

22 **Q.** And did you make any observations from the device that you
23 saw?

24 **A.** Yes.

25 **Q.** And what was your reaction when you saw that device?

1 A. Well, immediately I can see that the RTI board had been
2 modified. There was a couple wires that were soldered onto it
3 and then an additional printed circuit board that was installed
4 onto it.

5 And the way it was installed in the example that I saw, it
6 was right in the middle of a couple of the input disks, right
7 in the area where some cables were traveling back and forth.

8 So one of my immediate observations was that there's an
9 electrical safety risk. There's a requirement that any
10 electrical component that could take a charge be a certain
11 distance away from anything that can extend down to the tip of
12 the instrument to ensure that we don't inadvertently shock
13 either the patient or the user.

14 So I knew already that we were encroaching on some
15 electrical safety requirements.

16 **MS. PARKER:** Your Honor, I would seek to admit and
17 publish to the jury Exhibit 836.

18 Counsel, I don't have a hard copy. It's a video. It's
19 not objected to.

20 **MR. VAN HOVEN:** What foundation does he have for this?

21 **MS. PARKER:** Your Honor, the witness was asked
22 questions about whether he observed and tested certain returned
23 devices. This is a video of the procedure that was used to
24 hack those devices.

25 It's not an objected-to video, and I'd like to ask the

1 witness whether what he sees in that video is consistent with
2 the concerns he just raised about the device he inspected.

3 **MR. VAN HOVEN:** This witness has no basis whatsoever
4 to -- no background. He has never -- yeah.

5 **THE COURT:** Overruled. You can use the video.

6 **MS. PARKER:** Mr. Lee, if we could please pull up 836.

7 (Videotape played in open court.)

8 **BY MS. PARKER:**

9 **Q.** Mr. Duque, I will represent to you this was a video
10 produced in the case from Rebotix. Can you please tell the
11 jury what you just observed in that video?

12 **A.** Okay, yeah. It looks like they removed the housing
13 forcibly.

14 **Q.** And you talked to us a little earlier today about the
15 housing. What's your reaction to what you just saw there?

16 **A.** I mean, that's not supposed to happen. The housings are
17 there to protect the inside of the instrument, protect those
18 cables.

19 Yeah, that's -- not happy about it.

20 **Q.** Fair enough, sir.

21 **MS. PARKER:** Mr. Lee, can we please play the next clip
22 from the video?

23 **BY MS. PARKER:**

24 **Q.** And, Mr. Duque, if you could please watch your screen.

25 (Videotape played in open court.)

1 Q. Mr. Duque, I'll represent to you that that's a drill being
2 used to drill a hole into the S and Si EndoWrists.

3 Can you tell us what your reaction is to seeing that part
4 of the video?

5 A. Umm, yeah. It's -- these instruments are near and dear to
6 me. That -- that's pretty abusive to the instrument.

7 Q. What do you mean by that?

8 A. I mean, you're drilling into the housing or the chassis
9 top with a drill. There's particulate that's being generated.
10 That particulate is getting all over the pulleys and cables.

11 Yeah, it looks like an engineering workbench.

12 MS. PARKER: Mr. Lee, if we could please play the next
13 clip.

14 (Videotape played in open court.)

15 BY MS. PARKER:

16 Q. Mr. Duque, I know it's a little hard to see in the video,
17 but do you recognize that green device there has the circuit
18 board for the S and Si EndoWrist?

19 A. Yes, that's the RTI board.

20 Q. And what you can observe in the video is that a dental
21 pick is being used to scrape the covering off that RTI board?

22 A. I see that, yes.

23 Q. What's your reaction to that?

24 A. It's pretty aggressive. Just the RTI board is in a vice
25 clamp. It looks like they are vice clamping on the pogo pins,

1 which are moving components. They are scraping away the
2 pyrroline coating, which is intended to encapsulate the PCA
3 board to help it withstand the autoclave steam sterilization
4 cycle.

5 Yeah. I mean, when we're prototyping instruments and
6 doing things on an engineering workbench, we might do things
7 like this, but totally informal.

8 Q. And, Mr. Duque, you were asked some questions on your
9 examination on whether you conducted testing on the devices
10 that were returned to Intuitive through the RMA process, the
11 hacked devices.

12 Do you recall that?

13 A. I do.

14 Q. And you said that you didn't do testing on those. Can you
15 explain why not?

16 A. Well, first of all, the instruments were already broken,
17 which is why they were coming through the RMA loop. I don't
18 know if they were non-functional because of the cables being
19 broken or something else, but they came through the RMA loop
20 for a reason.

21 But, I mean, you asked me do I -- I don't know why I would
22 test this -- these instruments. They had been adulterated. I
23 don't know what the history is. I don't know what was done to
24 them. To me, it was just adulterated product.

25 Q. And why would you need to know the history of an

1 instrument in order to conduct the type of testing that you
2 told us about earlier today?

3 **A.** I mean, without knowing the history of what the instrument
4 went through, I mean, I don't know what conclusions you could
5 draw from any testing. I didn't have the back history. I
6 didn't know that it went through something like this.

7 If we want to derive any reasonable conclusions or results
8 out of any testing, I need to know what the back history -- I
9 need to know the pedigree of the components being tested.

10 **Q.** Thank you, Mr. Duque. I have no further questions.

11 **THE COURT:** Mr. Van Hoven?

12 **RECROSS EXAMINATION**

13 **BY MR. VAN HOVEN:**

14 **Q.** Mr. Duque, just a couple quick questions.

15 You don't know what aspect of the process that video is
16 even depicting, do you?

17 **A.** I have no idea, no.

18 **Q.** And you have no idea the Rebotix manufacturing process is
19 supported by dozens of validation tests?

20 **A.** I have no idea.

21 **Q.** You have no idea if there are specific instructions for
22 their techs who perform their process?

23 **A.** I'm entirely unfamiliar with anything that's done at
24 this -- the Rebotix process.

25 **Q.** No further questions.

THE COURT: Mr. Duque, thank you so much. You're excused.

(Witness excused.)

THE COURT: Come on forward, Mr. Michael.

MR. MICHAEL: Thank you, Your Honor.

Intuitive calls Dr. Loren Smith.

THE COURT: I recommend this is a good moment to stretch, if you'd like to.

LOREN SMITH,

called as a witness for the defendant, having been duly sworn,
testified as follows:

THE WITNESS: I do.

THE CLERK: Please be seated.

And state and spell your full name for the record.

THE WITNESS: It's Loren Smith, L-O-R-E-N. S-M-I-T-H.

MR. MICHAEL: Your Honor, may I approach the witness to hand up a binder?

THE COURT: You may. Thank you.

(Whereupon exhibit binder was tendered to the witness.)

DIRECT EXAMINATION

BY MR. MICHAEL:

Q. Good morning, Dr. Smith.

A. Good morning.

Q. Can you please introduce yourself to the jury.

1 **A.** My name is Loren Smith.

2 **Q.** And are you an economist by profession?

3 **A.** I am.

4 **Q.** Were you retained by Intuitive Surgical in this case to
5 provide expert economic analysis and opinions?

6 **A.** I was.

7 **Q.** And have you prepared some slides to help explain your
8 analysis and opinions to the jury?

9 **A.** I did.

10 **Q.** If you would take a look in the front of your notebook at
11 Tab 1, or it should be labeled Demonstratives.

12 Do you see a document that's been marked DDX-6 for
13 identification?

14 **A.** I do.

15 **Q.** And is that a copy of your demonstrative slides?

16 **A.** It is.

17 **MR. MICHAEL:** Your Honor, I request permission to
18 publish Dr. Smith's slides to the jury.

19 **MR. McCARLEY:** No objection.

20 **MR. MICHAEL:** Thank you.

21 And, Mr. Lee, if you could bring up Slide 1, please.

22 (Document displayed.)

23 **BY MR. MICHAEL:**

24 **Q.** Dr. Smith, what is your educational background?

25 **A.** I have a PhD in economics from the University of Virginia.

1 My training was in -- my primary fields of interest were
2 industrial organization, which is the strategic interaction of
3 firms, and econometrics, which is basically statistics applied
4 to economic questions.

5 Q. And what did you do after earning your PhD?

6 A. I began my career in government service. So I was a staff
7 economist at the United States Federal Trade Commission.

8 Q. What is the United States Federal Trade Commission?

9 A. So the Federal Trade Commission and the Department of
10 Justice split authority for regulating antitrust matters. So
11 prospective mergers, conduct matters involving single firms.

12 They share -- it's not clear exactly how it happened, but
13 they split it. And it's normally a long, like, historical
14 industry expertise that is split, but they do very much the
15 same thing.

16 Q. And what was your role as an economist at the Federal
17 Trade Commission?

18 A. So a lot of the time I spent doing a lot -- doing the same
19 thing that I do today. I mean, investigating antitrust
20 matters. Potentially getting involved in litigations.

21 The Federal Trade Commission and the Department of Justice
22 do investigations. And then sometimes they end up litigating
23 like this, but often matters are resolved before that point.

24 Q. So you're no longer in the government. You're in private
25 practice today; is that correct?

1 **A.** Yeah. I have been for a little more than a decade.

2 **Q.** And is all of your work in private practice as an economic
3 consultant, does all of that involve representing private
4 companies?

5 **A.** No. I still from time to time, probably three, four times
6 a year, work for the Federal Trade Commission or the U.S.
7 Department of Justice as an outside expert.

8 **Q.** So the antitrust agencies of the United States have sought
9 out your services as an expert economist since you left the
10 government; is that correct?

11 **A.** That's right. So they are busy agencies, and they --
12 particularly litigations require a fair bit of resources, and
13 so they often outsource that to outside agencies.

14 **Q.** And when you're serving as an expert economist in
15 litigation for the Federal Trade Commission or the Department
16 of Justice, are you consulting on the plaintiff's side of the
17 case or the defendant's side of the case?

18 **A.** So if they ultimately decide to bring a lawsuit, they are
19 typically the plaintiff in a -- challenging a horizontal merger
20 or challenging a certain type of conduct by a firm.

21 **Q.** Now, you're being paid for the time that you've spent
22 working on this case; is that correct?

23 **A.** Yes.

24 **Q.** And does your compensation depend in any way on the
25 outcome of the case?

1 **A.** It does not.

2 **Q.** Let me ask you to turn to the next slide, please.

3 **MR. MICHAEL:** And, Mr. Lee, if you could bring that
4 up.

5 (Document displayed.)

6 **BY MR. MICHAEL:**

7 **Q.** Is there an overarching question that you set out to
8 analyze in this case, Dr. Smith?

9 **A.** Yes. So I was asked to investigate or evaluate whether
10 certain conduct by Intuitive that has been challenged by the
11 plaintiffs here, so contractual provisions that they have, are
12 causing anticompetitive harm or are, alternatively, bringing
13 about pro-competitive benefits.

14 **MR. MICHAEL:** Go to the next slide, please.

15 (Document displayed.)

16 **BY MR. MICHAEL:**

17 **Q.** What factors does an economist consider in determining
18 whether conduct is causing, as you said, anticompetitive harm
19 or bringing about pro-competitive benefits?

20 **A.** Well, in an ideal world, we would look at outcomes. So
21 considering whether the challenged conduct is allowing
22 Intuitive to innovate better or improve the quality of their
23 product, lower prices or, alternatively, the opposite of those
24 things. Is it harming innovation or quality or increasing
25 prices?

1 So that's the type of outcomes we would look to to
2 determine whether anticompetitive harm has been caused.

3 Q. And did you analyze each of those factors in this case:
4 Innovation, quality, and price?

5 A. I did.

6 MR. MICHAEL: Let's go to the next slide, please.

7 (Document displayed.)

8 BY MR. MICHAEL:

9 Q. Now, based on your analysis of the economic evidence in
10 the case, did you reach certain conclusions or opinions?

11 A. I did.

12 Q. Okay. And we're going to talk about each one of these in
13 more detail, so I won't dwell on them now.

14 But is what we're looking at on Slide 4 a summary of the
15 key conclusions or opinions that you reached based on your
16 analysis of the economic evidence?

17 A. Yeah. That's a summary of the findings that I made.

18 Q. Okay. Well, let's start with the first one.

19 MR. MICHAEL: You can go to the next slide, Mr. Lee.

20 (Document displayed.)

21 BY MR. MICHAEL:

22 Q. And your first conclusion -- and I think you alluded to
23 this earlier -- says that outcomes were pro-competitive. And
24 you talk about innovation, quality, and price.

25 First of all, what do you mean when you say "outcomes"?

1 **A.** So just looking at the marketplace and Intuitive's place
2 in it and what they have been doing over the past 25 years and
3 whether it has been -- indicates that they have been behaving
4 competitively or whether it indicates, alternatively, that they
5 have been behaving like a monopolist.

6 **Q.** Let's go to the next slide, please.

7 (Document displayed.)

8 **Q.** What were the real world outcomes that you observed with
9 respect to innovation?

10 **A.** This is one example. So this is looking at their -- on
11 the left-hand vertical axis is the procedures that da Vinci has
12 been able to win versus traditional methods, like laparoscopy
13 and open surgery.

14 And on the right-hand axis is how much R&D they are
15 spending developing their product, improving its quality and so
16 on.

17 As you can see, they are both trending upward. So it
18 indicates to me that they have continued to vigorously compete,
19 to grow their business.

20 And they have invested back into the business. They have
21 been on an investment cycle over time that continues. And they
22 continue to do that today more than they have ever done before.

23 **Q.** Why does increasing investment in innovation matter to you
24 as an economist in assessing whether a market is competitive or
25 not?

1 **A.** It's just a marker of pro-competitive activity. If they
2 were a monopolist who had become lazy, they have this protected
3 market space, they may relax their R&D expenditures. They may
4 decide they don't need to innovate as much as they did before.

5 By contrast, what they seem to be doing is investing more
6 over time rather than less.

7 **MR. MICHAEL:** Let's go to the next slide, please.

8 (Document displayed.)

9 **BY MR. MICHAEL:**

10 **Q.** Now, the next factor that you identified at the outset was
11 quality; is that right?

12 **A.** Yes.

13 **Q.** And from your perspective as an economist, did you see
14 evidence in this case that Intuitive competes on the basis of
15 product quality?

16 **A.** Yeah, it's not -- I mean, this slide is important not just
17 in describing how they compete, but who they are competing
18 with.

19 So this is an illustration of their go-to-market strategy
20 with hospitals, where they go in. They talk about how the
21 Intuitive surgical system, relative to traditional methods like
22 lap and open, have certain advantages: They lower length of
23 stay, lower conversions.

24 And then that allows the hospital to weigh those benefits
25 and the cost of not having them against the capital outlay that

1 an Intuitive surgical system requires.

2 **MR. MICHAEL:** And just for the record, the document
3 that's being shown here has been marked TX-1325. It's in
4 evidence.

5 **BY MR. MICHAEL:**

6 **Q.** Is it your understanding that this is an Intuitive
7 document?

8 **A.** It is. It's a -- I don't know if I've seen precisely this
9 document, but I have seen documents -- I think I have seen this
10 document.

11 **Q.** Okay.

12 **MR. MICHAEL:** Let's go to the next slide, please.

13 (Document displayed.)

14 **BY MR. MICHAEL:**

15 **Q.** Now, Dr. Smith, did you also analyze Intuitive's actual
16 prices for the da Vinci system over time?

17 **A.** Again, yes. Just in an effort to determine whether it
18 looks like they've been -- as they have gained sales and
19 arguably -- or the plaintiffs have accused them of gaining
20 monopoly power over time, has that been demonstrated by an
21 increase in their pricing?

22 **Q.** And what did you find when you looked at da Vinci prices
23 over time?

24 **A.** Well, these are the -- this is for the platforms, the
25 consoles. And they have stayed relatively flat.

1 In real terms the dotted line there, that's adjusting for
2 inflation. They have actually gone down a little bit since
3 2014.

4 **Q.** Just to be clear about the terminology, when you say "real
5 terms," you mean prices adjusted for inflation; is that
6 correct?

7 **A.** Yeah. So the top line there is just like nominal, like
8 what is charged on the day it is charged, 2016, 2017, 2018.

9 The dotted line is effectively comparing everything in
10 2014 dollars, so it's adjusting everything down to account for
11 inflation.

12 **MR. MICHAEL:** Let's look at the next slide, please.

13 (Document displayed.)

14 **BY MR. MICHAEL:**

15 **Q.** So we just talked about prices for the da Vinci.

16 Did you also look at prices for EndoWrists specifically
17 over time?

18 **A.** Yeah. So these are actually going down in real and
19 nominal terms. So this is price-per-procedure.

20 And you can see that over time, the prices of EndoWrist
21 instruments on a per-instrument basis is not really changing.
22 But as the hospitals, the doctors get more efficient with
23 operating the -- the da Vinci surgical systems, also as the
24 da Vinci surgical system continues to compete with lap and open
25 and do additional procedures that require different sets of

1 instruments, the price-per -- per-procedure are actually going
2 down for instruments.

3 **Q.** In a market where competition is being harmed, do you
4 generally expect to see prices going up or going down?

5 **A.** I would expect that they are over time gaining an
6 entrenching market power. I would expect prices to be rising,
7 not falling.

8 **Q.** And when you see prices staying flat or going down, is
9 that, generally, a pro-competitive outcome or an
10 anticompetitive outcome?

11 **A.** It's consistent with their ongoing competition with lap
12 and open and their efforts to penetrate deeper into the
13 surgeries that traditionally have been occupied by those
14 methods.

15 **Q.** So you just talked about some of the economic evidence of
16 outcomes that you saw with respect to innovation, quality, and
17 price.

18 Does the economic significance of any of that evidence
19 depend in this case on how you define the relevant market for
20 Intuitive's products, or is it independent of that?

21 **A.** It's independent of it completely. I mean, it's -- so
22 relevant -- to be clear, what relevant markets are in an
23 antitrust case like this one, they are indirect indicators of
24 market power, monopoly power. These are -- this is just in a
25 direct assessment. It doesn't depend on how the market is

1 defined or anything. I'm looking at outcomes.

2 And so the two things are very much related, and we'll
3 talk about that in a minute. But this tells me that the
4 markets that Dr. Lamb has defined are not telling you much
5 about the likely competitive effects of the challenged conduct.

6 **MR. MICHAEL:** Let's go to the next slide, Slide 10,
7 please.

8 (Document displayed.)

9 **BY MR. MICHAEL:**

10 **Q.** Does the economic evidence of outcomes with respect to
11 innovation, quality, and price indicate to you that Intuitive
12 was behaving like a monopolist?

13 **A.** No. And I think it's because of their continued desire to
14 do more and more surgeries at hospitals. I mean, the evidence
15 indicates that over time, they are -- and we'll see some of
16 that in a minute -- gaining a greater share of surgeries
17 relative to lap and open. And that's been their focus for 25
18 years.

19 **Q.** So did the evidence you looked at show you that Intuitive
20 had stopped innovating or investing over time in research and
21 development?

22 **A.** No. They are increasing their investment in R&D over
23 time.

24 **Q.** Did the evidence you looked at indicate that Intuitive had
25 cut output or reduced quality over time?

1 **A.** No. There has been significant instances of improved
2 provide quality over time, new platforms, extended use
3 instruments, examples.

4 **Q.** Did the economic evidence you looked at indicate to you
5 that Intuitive had raised price over time?

6 **A.** No, they have not.

7 **MR. MICHAEL:** Let's go to the next slide, please.

8 (Document displayed.)

9 **BY MR. MICHAEL:**

10 **Q.** Your next conclusion has to do with Intuitive's policies.
11 And I want to ask you at the outset: Did you consider whether
12 Intuitive policies that SIS is challenging in this case did
13 anything to promote the pro-competitive outcomes that you just
14 described?

15 **A.** Yeah. I mean, it's been alleged that those policies are
16 causing anticompetitive harm.

17 Considered that possibility as well as the possibility
18 that they had other motivations and reasons.

19 **Q.** And what conclusion did you reach about whether
20 Intuitive's policies on unauthorized instruments are
21 pro-competitive or anticompetitive?

22 **A.** I think if you look at the policies themselves or
23 statements that Intuitive has historically made for 25 years
24 about those policies, they are there to ensure patient safety,
25 to foster investments, to protect Intuitive's reputation with

1 hospitals and patients.

2 **Q.** And what does that lead you to conclude about whether the
3 policies are pro-competitive or anticompetitive?

4 **A.** Those are rationale that lead to pro-competitive outcomes.

5 **MR. MICHAEL:** Let's go to the next slide, please.

6 (Document displayed.)

7 **BY MR. MICHAEL:**

8 **Q.** Now, you're familiar with a term -- and I believe the jury
9 has seen these contract provisions before -- in Intuitive's
10 contracts that relates to "unauthorized instruments or
11 accessories;" correct?

12 **A.** Yes, I've seen that.

13 **Q.** And was that a term, in your understanding, that Intuitive
14 added to its contracts in 2019 or 2020, or was it there going
15 all the way back to 2000?

16 **A.** So, I mean, the reason that this is interesting -- it was
17 there since 2000.

18 **Q.** And why is that interesting to you as an economist?

19 **A.** It's interesting because I don't think anybody in this
20 case, including Dr. Lamb, is arguing that Intuitive had
21 monopoly power in 2000. And so the fact that they had these
22 same contract provisions then indicates that they were there
23 for a different reason.

24 **Q.** And does it indicate anything to you about whether the
25 purpose of the contract terms was pro-competitive or

1 anticompetitive?

2 **A.** It -- it at least is not consistent with them being
3 brought about by anticompetitive motivations.

4 **MR. MICHAEL:** Let's go to the next slide, please.

5 (Document displayed.)

6 **BY MR. MICHAEL:**

7 **Q.** Did you find the same thing to be true of the limited
8 license provision in Intuitive's contracts that SIS is
9 complaining about in this case?

10 **A.** Yeah. I mean, so the key terms about the limited life of
11 an instrument were there since 2000 in the contracts. I think
12 we heard that was a part of the product design since 1995.

13 **Q.** And if you go to the next slide, is the same thing also
14 true about the warranty provisions of Intuitive's contracts?

15 (Document displayed.)

16 **A.** Yeah. Those have been there since the beginning.

17 **Q.** Now, Dr. Smith, in considering whether Intuitive's
18 contract provisions were pro-competitive or anticompetitive,
19 did you also consider what Intuitive said in its public filings
20 about the risks to its business whether those contract terms
21 were adopted?

22 **A.** Right. So they were there in 2000 before Intuitive
23 arguably had any significant market power. And from the
24 beginning, so from 2000, they are outlining in their SEC
25 filings why they have such provisions. They note that, you

1 know, it protects safety, quality, reliability of the products,
2 and so on.

3 **Q.** So let me ask you to turn to Tab 6 in your binder, please.

4 (Witness complied.)

5 **Q.** And you should find there a document that's marked
6 TX-1632.001-R.

7 **A.** Yes, I see it.

8 **Q.** Do you recognize that as a copy of Intuitive's 10-K filing
9 from 2000 that you considered in connection with forming your
10 opinions in this case?

11 **A.** Yes. I recognize this document.

12 **MR. MICHAEL:** Your Honor, I offer TX-1632.001-R into
13 evidence.

14 **MR. McCUALEY:** No objection, Your Honor.

15 **THE COURT:** It's admitted.

16 (Trial Exhibit 1632.001-R received in evidence).

17 **MR. MICHAEL:** Thank you. And if I could publish an
18 excerpt of it on the next slide, that may be the easiest way to
19 do it.

20 Is that okay, Your Honor?

21 **THE COURT:** You may.

22 **MR. MICHAEL:** Thank you.

23 Mr. Lee, if you can go to Slide 15, please.

24 (Document displayed.)

1 BY MR. MICHAEL:

2 Q. On this slide, Dr. Smith, are you showing an excerpt from
3 Intuitive's 10-K filing from the year 2000 that discusses
4 certain risks to Intuitive's business?

5 A. Yeah. I mean, this is sort of -- this is describing what
6 they perceive as risk to parts of their surgical system being
7 out of their control.

8 Q. Okay. And do those include some of the same kinds of
9 risks that you talked about a moment ago, including related to
10 patient safety and ensuring quality and reliability?

11 A. Yeah. I mean, I think they are saying, like, outcomes and
12 safety are paramount. And if we -- if something happens that's
13 outside of our control, it's going to harm us. It's going to
14 harm not just patients, it's going to harm our reputation.

15 Q. Is protecting patient safety and ensuring product quality
16 a pro-competitive or anticompetitive purpose?

17 A. They are very closely aligned. I mean, patient safety is,
18 for a product like this, an aspect of its quality.

19 Q. And are -- if contract provisions are designed to protect
20 patient safety and ensure product quality, does that tell you,
21 as an economist, anything about whether those contract
22 provisions are pro-competitive or anticompetitive?

23 A. Consistent with their being pro-competitive.

24 Q. Now, if by protecting patient safety and ensuring product
25 quality, having certain contract terms in place also helped

1 Intuitive to grow its business and become more successful, does
2 that change your conclusion about whether the contract terms
3 are pro-competitive or anticompetitive?

4 **A.** No. I mean, that I think that alignment of quality
5 outcomes, patient safety with Intuitive's financial interest is
6 what you might want.

7 **MR. MICHAEL:** Let's go to the next slide, please.

8 (Document displayed.)

9 **BY MR. MICHAEL:**

10 **Q.** Now, on this slide, Dr. Smith, are you showing an excerpt
11 of another 10-K filing, this one from 2021?

12 **A.** I am. Yes.

13 **MR. MICHAEL:** And for the record, this is an excerpt
14 of TX-1632.022-R, which is already in evidence.

15 **MR. McCARLEY:** I'm sorry, counsel. May I have the
16 number again, just for my notes?

17 **MR. MICHAEL:** Yes. It's on the slide as well.

18 TX-1632.022-R.

19 **BY MR. MICHAEL:**

20 **Q.** Now, Dr. Smith, what, if anything, did the way in which
21 Intuitive described risks to its business here in 2021 indicate
22 to you about whether the contract terms had remained
23 pro-competitive over time?

24 **A.** Yeah. I mean, it's just this -- it's very similar to what
25 they had in 2000. So the description of what is motivating the

1 contractual provisions in their 10-K filings haven't changed.

2 **MR. MICHAEL:** Let's go to the next slide, please.

3 (Document displayed.)

4 **BY MR. MICHAEL:**

5 **Q.** Are you familiar with a concept in economics called free
6 riding?

7 **A.** Yes.

8 **Q.** What is free riding, if you could explain that simply to
9 the jury?

10 **A.** Yeah. Free riding is when one firm makes an investment in
11 something that another firm then benefits from without having
12 helped to pay for it.

13 **Q.** And as a matter of economics, is it good for competition
14 or bad for competition when one firm makes an investment in
15 something and another company free rides on that investment?

16 **A.** It can be bad for competition because it undermines the
17 incentive of the first firm to invest because portions of
18 the -- the return on that investment that they are anticipating
19 are being siphoned off by another company.

20 **Q.** Did you see evidence of economic free riding occurring in
21 this case?

22 **A.** Yes. I mean SIS, in its marketing materials in
23 particular, leveraging brands that Intuitive has built up over
24 time.

25 **Q.** Before we get there, just looking at Slide 17, what are

1 you depicting on this slide here?

2 **A.** This is for a time period 1997 to 2021, an estimation of
3 Intuitive's investments in its products and how much of -- at
4 the same time, SIS invested in those same products.

5 **Q.** And so did you see economic evidence in this case that SIS
6 was free riding in the sense that you described on Intuitive's
7 investment in research and development?

8 **A.** Yeah. So these are investments Intuitive has made that
9 have built up their reputation and their brand. And then SIS
10 is benefiting from that without having paid anything for it.

11 **Q.** Just so there's no confusion about the numbers, the other
12 day the jury heard testimony from Mr. Rosa that Intuitive, from
13 its founding through 2022, had invested, I believe, more than
14 \$5 billion in R&D. Here you show four plus billion dollars.

15 Can you explain the difference?

16 **A.** Just a different time period. I think in the continuation
17 of what I showed earlier, I believe Mr. Rosa said in 2022
18 Intuitive had invested another eight to -- eight to
19 \$900 million, which would make it 5 billion, not 4 billion.

20 **Q.** And that was not included in the --

21 **A.** That was not included in my data.

22 **Q.** Okay. Now, in addition to free riding on Intuitive's
23 investments, did you see evidence in this case regarding
24 whether SIS was also free riding on Intuitive's reputation in
25 the marketplace?

1 **A.** Yeah. I mean, their investments are what sort of
2 contribute to that; not only the quality of their product, but
3 also their reputation.

4 And SIS, as I said earlier, in their marketing materials,
5 often references Intuitive's brands.

6 **Q.** Take a look at Tab 3 in your binder, please, which is a
7 document marked TX-1500.

8 And can you tell me if you recognize this as an SIS
9 marketing document that you considered in forming your opinions
10 in this case?

11 **A.** It is.

12 **MR. MICHAEL:** Your Honor, I offer TX-1500.

13 **MR. McCARLEY:** No objection.

14 **THE COURT:** Thank you. Mr. Michael, it's admitted.

15 (Trial Exhibit 1500 received in evidence)

16 **MR. MICHAEL:** May we publish part of the document?

17 **THE COURT:** You may.

18 **MR. MICHAEL:** Mr. Lee, if we can go to the next slide,
19 Slide 18.

20 (Document displayed)

21 **BY MR. MICHAEL:**

22 **Q.** Here you're showing an excerpt of 1500; is that correct?

23 **A.** Yes.

24 **Q.** And SIS in this marketing document states [as read] :

25 "A repaired EndoWrist is not an alternative or

1 replacement device. It is an original da Vinci
2 manufactured device that has been repaired to original
3 specifications."

4 Can you explain how this relates to your opinion about
5 economic free riding?

6 **A.** Yeah. So there is value in the EndoWrist and the da Vinci
7 brands that has been built up over time through Intuitive's
8 investments in the quality -- the reputation for quality and
9 safe outcomes that they have demonstrated.

10 And this is -- SIS is basically taking those brand names
11 and putting it on their documents that they are handing to
12 hospitals for their service.

13 **MR. MICHAEL:** Can you go to the next slide, please.

14 (Document displayed.)

15 **BY MR. MICHAEL:**

16 **Q.** Before we move on, can you please summarize for the jury
17 why you concluded that Intuitive's policy on unauthorized third
18 parties was pro-competitive as a matter of economics?

19 **A.** My review of the evidence indicates that those policies
20 are used by Intuitive to foster pro-competitive outcomes,
21 including protecting patient safety, improving the quality of
22 their product, building up Intuitive's reputation for providing
23 quality outcomes and good-patient outcomes, and continuing to
24 innovate. And their pricing is not going up.

25 **Q.** Now, did you also consider, in forming your opinions,

1 whether other companies in the marketplace have similar
2 contract terms or policies to Intuitive?

3 **A.** Yeah. I mean, for similar reasons to looking at what
4 Intuitive was doing way back at the beginning, before they
5 arguably had any market power, it's interesting to know whether
6 other firms that don't have a significant presence in the
7 marketplace have similar contractual provisions. It suggests
8 that those contractual provisions have purposes that are
9 unrelated to any anticompetitive action.

10 **Q.** Let me ask you to turn to Tab 5 in your binder, which is a
11 document marked TX-1612-R, and to look specifically at Page 37
12 of that document.

13 (Witness complied.)

14 **Q.** Dr. Smith, can you tell me whether this was a document
15 relating to contract terms of a company called Medrobotics that
16 you considered in forming your opinion?

17 **A.** Yes. Medrobotics was a -- another company that had a
18 device. I think it's no longer present in the market.

19 **MR. MICHAEL:** Your Honor, I offer TX-1612-R.

20 **MR. McCARLEY:** No objection.

21 **THE COURT:** Thank you, Mr. McCaulley. It's admitted.

22 (Trial Exhibit 1612-R received in evidence).

23 **MR. MICHAEL:** Thank you.

24 May I publish an excerpt from Page 37 of the document?

25 **THE COURT:** You may.

1 **MR. MICHAEL:** Mr. Lee, if you could go to Slide 20,
2 please.

3 (Document displayed.)

4 **BY MR. MICHAEL:**

5 **Q.** What did you find, Dr. Smith, with respect to whether
6 Medrobotics had any similar contract terms to Intuitive?

7 **A.** Yeah. So a very similar term to what we read earlier
8 about accessories made or approved by Intuitive. Medrobotics,
9 in their contracts, doesn't want their customers using
10 instruments that are not made or approved by Medrobotics.

11 **Q.** And what did that piece of economic evidence tell you
12 about whether Intuitive's contract term were pro-competitive or
13 anticompetitive?

14 **A.** It's just consistent with their having a motivation that's
15 not anticompetitive, certainly. And, you know, for efficiency
16 reasons, you would expect that -- to have a term like this, you
17 know, it's not motivated by anticompetitive motivations, then
18 it's probably motivated by something pro-competitive.

19 **Q.** Did you also look at the policies of a company called CMR?

20 **A.** I have seen some of CMR's provisions.

21 **Q.** Okay. And if you look at Tab 1 in your binder, did you
22 consider the terms -- I'll wait until you're there. Sorry.

23 (Witness complied.)

24 **Q.** My question was with regard to Tab 1, which is a document
25 marked TX-1309-R. Did you consider the terms set out in this

1 document in conducting your economic analysis this case?

2 **A.** Yes, I've seen this document before.

3 **MR. MICHAEL:** Your Honor, I offer TX-1309-R into
4 evidence.

5 **MR. McCARLEY:** No objection.

6 **THE COURT:** It's admitted.

7 (Trial Exhibit 1309-R received in evidence)

8 **MR. MICHAEL:** And this one, Your Honor, is under seal
9 by a third party. So I have hard copies to hand out to the
10 jury.

11 May I do that now?

12 **THE COURT:** You may.

13 **MR. MICHAEL:** Thank you.

14 (Whereupon Exhibit 1309-R was tendered to the jury.)

15 **THE COURT:** Dr. Smith, do you have a copy?

16 **THE WITNESS:** I do. I do have a copy. Thank you.

17 (Brief pause.)

18 **BY MR. MICHAEL:**

19 **Q.** Dr. Smith, I'll direct you to Page 23 of TX-1309.

20 **A.** Yes, I see it.

21 **Q.** And I'm not going to ask you to read out loud any
22 significant parts of this, but do you see there's a heading
23 titled "Safety Features"?

24 **A.** I do.

25 **Q.** And below that there is some discussion of safety features

1 associated with the CMR system?

2 **A.** Yes.

3 **Q.** Apologies if I asked you this before, but could you just
4 remind us what you understand CMR to be?

5 **A.** CMR is a -- they make a minimally invasive surgical
6 platform. It's not been sold in the United States. It's
7 sold in -- I think there's some in the UK and...

8 **Q.** Sorry to interrupt. Were you done?

9 **A.** Yes, sir.

10 **Q.** Okay. And then if you look at the next page, Page 24, do
11 you see the second bullet up from the bottom of the page that
12 starts "The subject device"?

13 **A.** Yes.

14 **Q.** And I'll just ask you to read that to yourself.

15 (Witness complied.)

16 **A.** Okay.

17 **Q.** Dr. Smith, did you find that CMR had some similar policies
18 with respect to surgical instruments used with its system as
19 Intuitive did in this case?

20 **A.** Yeah. Similar policy, similar product design.

21 **Q.** And what did that tell you about whether Intuitive's
22 policies were pro-competitive or anticompetitive?

23 **A.** Well, this is a company, again, that is nascent. So it
24 doesn't have any significant market power.

25 And this is under "Safety Features," so it tells me that,

1 you know, it's consistent with Intuitive's policies being
2 motivated by safety and quality.

3 **MR. MICHAEL:** Your Honor, we're done with that
4 document. Would you like it to be collected from the jury or
5 should --

6 **THE COURT:** Yes, please.

7 **MR. MICHAEL:** Okay.

8 (Exhibit 1309-R collected from the jury.)

9 **BY MR. MICHAEL:**

10 **Q.** Now, Dr. Smith, if we could go to your next slides, Slide
11 21, I want to --

12 **MR. MICHAEL:** And do we have that on the screen,
13 Mr. Lee?

14 (Document displayed.)

15 **BY MR. MICHAEL:**

16 **Q.** I want to talk about your next conclusion, which was that
17 Intuitive did not exclude SIS from competing; is that right?

18 **A.** That's right.

19 **MR. MICHAEL:** Let's go to Slide 22, please.

20 (Document displayed)

21 **BY MR. MICHAEL:**

22 **Q.** And can you explain to the jury what you are depicting on
23 this slide and how it relates to your conclusion?

24 **A.** Yeah. So as to whether SIS's ability to compete has been
25 harmed, you might look at what they have been doing since the

1 challenged conduct, or the window of time that they are
2 alleging Intuitive did something.

3 And SIS is a company that provides services to hospitals.
4 They repair or refurbish medical device -- devices and
5 accessories, and they flourished during this time. They have
6 continued to grow. Their revenue from 2019 to 2023 has almost
7 tripled.

8 **MR. MICHAEL:** Let's go to Slide 23, please, Mr. Lee.

9 (Document displayed.)

10 **BY MR. MICHAEL:**

11 **Q.** Your next conclusion, Dr. Smith, relates to whether
12 Intuitive is a monopolist or has monopoly power; is that right?

13 **A.** Yes.

14 **Q.** Before we turn to discussing this specific evidence that
15 you looked at, can you explain to the jury what it means as a
16 matter of economics for a firm to have monopoly power?

17 **A.** I think probably the easiest way to think about it is that
18 it's for a firm to sustain a price above the competitive level
19 for an extended period of time.

20 **Q.** And in this case, did you find that Intuitive had the
21 power to raise prices before the competitive level, as you just
22 described?

23 **A.** No. I mean, my review of the evidence indicates that they
24 have continued to compete vigorously throughout the last 25
25 years, principally with other surgical modalities, lap and

1 open.

2 Q. Let's look at some of that evidence now.

3 MR. MICHAEL: And if we could, let's go to Slide 24,
4 please.

5 (Document displayed.)

6 BY MR. MICHAEL:

7 Q. I want to start with SIS's claims that Intuitive's
8 da Vinci competes in a relevant market that is limited to what
9 SIS has termed MIST surgical robots.

10 What is the first thing that you looked at in terms of
11 data or economic evidence to evaluate that claim?

12 A. I mean, I looked at Intuitive's focus and who they are
13 competing with and how they are going to market.

14 The surgical robot is not sold for use without the
15 instruments. The instruments are not sold for use without the
16 robot. And who they are focused on in their documents, in
17 their marketing materials, when they go to hospitals to have
18 conversations about doing more da Vinci surgeries is other
19 surgical solutions, lap and open.

20 Q. And can you explain to the jury specifically what the data
21 is that you're showing on Slide 24?

22 A. So this is over time, between 2012 and 2021, the number of
23 surgeries that were performed using these different modalities.
24 And you can see that da Vinci surgeries are, over time,
25 growing.

1 Traditional methods, lap and open, are declining sort of
2 in parallel with one another. It indicates that some of the
3 surgeries that Intuitive is now doing come at the expense of
4 open and some come at the expense of laparoscopy.

5 **MR. MICHAEL:** Let's go to the next slide, please.

6 (Document displayed.)

7 **BY MR. MICHAEL:**

8 **Q.** Now, Dr. Lamb, in his testimony, talked about Intuitive
9 having a high market share, market share about 90 percent I
10 think is what he said.

11 Do you agree that Intuitive's market share was about
12 90 percent?

13 **A.** No. I think that's because I disagree that the market
14 he's defined is a relevant market. So when we're talking about
15 the contract provisions that Intuitive has, you want to look at
16 the -- what they are focused on in competing and why those
17 terms are there.

18 They are offering a surgical solution to the marketplace,
19 and that's in competition with lap and open. So I -- I just --
20 he and I just disagree about what the relevant market is here.

21 **Q.** So can you explain what you did to look at shares and what
22 the data is that you're showing on Slide 25?

23 **A.** Yeah. So these are just some examples of surgeries that
24 are performed using different modalities.

25 Prostatectomy is one of the first procedures that were

1 done using an Intuitive surgical system, and they perform a
2 relatively high proportion of those.

3 Cholecystectomy is something that's more often done
4 laparoscopically.

5 And then a colon surgery is more often done using open
6 methods.

7 So these are just three examples of surgeries that can be
8 performed using a da Vinci surgical system and their relative
9 share of the surgeries that are performed using it.

10 Q. So for prostatectomy, what was the da Vinci's relative
11 share as compared to open and lap that you observed in 2021?

12 A. So that's the -- the most prevalent da Vinci surgery, and
13 they have a -- more than half of procedures are done doing --
14 using an Intuitive Surgical system.

15 Q. And that's the 61 percent that you identify for a
16 prostatectomy?

17 A. Yes.

18 Q. And how about for cholecystectomy, removing the
19 gallbladder, what was da Vinci's share in 2021 for that
20 procedure?

21 A. So there their share is much smaller. I don't have a
22 number by the line there, but it looks like it's on the order
23 of maybe 12 percent.

24 Q. And just to be clear, do you see the fourth column over?
25 The da Vinci share?

1 **A.** Oh, 14 percent. So I was close.

2 **Q.** So I just wanted to make sure I understood your chart
3 here.

4 Is that what you're showing as da Vinci's share relative
5 to open and lap?

6 **A.** Yes.

7 **Q.** And how about for colon?

8 **A.** It's 23 percent there.

9 **Q.** Got it.

10 **MR. MICHAEL:** Let's go to the next slide, please.

11 (Document displayed.)

12 **BY MR. MICHAEL:**

13 **Q.** Now, was there any category or procedure type in which you
14 found that da Vinci surgery was the only surgical option and
15 did not compete with either open or lap?

16 **A.** Not among surgeries that can be performed using the
17 da Vinci surgical systems. All of them can be done using
18 laparoscopy and/or open methods.

19 **Q.** And in most of those surgical categories, did da Vinci
20 surgery account for more than half or less than half of the
21 procedures?

22 **A.** Only prostatectomy does it account for more than half.

23 **Q.** Now, do the numbers that you're showing on Slide 26, do
24 those include all hospitals that do these procedures or only a
25 subset?

1 **A.** This is across all hospitals.

2 **Q.** So would some of these be hospitals that don't even have a
3 da Vinci?

4 **A.** Yes.

5 **Q.** And why did you believe it was relevant to look across all
6 hospitals, as opposed to only those that have a da Vinci in
7 assessing shares?

8 **A.** There are two margins on which Intuitive is competing for
9 surgeries.

10 One is to convince a hospital that they should buy the
11 capital to have a da Vinci surgical system in the hospital so
12 that they can perform the surgery.

13 And then even for hospitals that have them, there's a
14 second margin on which they are competing, which is to have
15 that be used to perform the surgery.

16 **Q.** So did you also consider what the share numbers show if
17 you look only at hospitals that already have a da Vinci system
18 or did as of 2021?

19 **A.** Right. So, I mean, it would ignore the first dimension of
20 competition I just talked about.

21 But, yes, if you focus only on hospitals that have
22 performed at least one da Vinci surgery, those shares are shown
23 on the next slide, I believe.

24 **MR. MICHAEL:** So let's take a look that, Slide 27,
25 please.

1 (Document displayed.)

2 **BY MR. MICHAEL:**

3 Q. And explain what you found or summarize what you found,
4 please, when you looked at share of procedures only at
5 hospitals that have a da Vinci system?

6 A. So they average a little more, you know, a little higher
7 share for the da Vinci surgical system. And there are now two
8 procedures where they have more than half, on average.

9 Q. And that's prostatectomy and hysterectomy?

10 A. Yes.

11 Q. And prostatectomy, the share here at hospitals that have a
12 da Vinci system is 76 percent as of 2021; is that right?

13 A. Yes.

14 Q. And for cholecystectomy, the other procedure we talked
15 about earlier, the share is 29 percent; is that right?

16 A. Yes.

17 **MR. MICHAEL:** Let's go to Slide 29, please, Mr. Lee.

18 (Document displayed.)

19 **BY MR. MICHAEL:**

20 Q. Now, this is a document that we already looked at earlier
21 when you were talking about market outcomes, TX-1325.

22 I just want to ask you, and return to it now to ask you,
23 what does this comparison in Intuitive's document between
24 da Vinci surgery and open and lap tell you about the market in
25 which Intuitive competes?

1 **A.** Yeah, so this is their focus. They are -- their principal
2 focus is not competition with other robotic systems. It's open
3 and laparoscopy and procedures. And so they are going out to
4 hospitals trying to convince them to use the da Vinci surgical
5 system more often for procedures by explaining the quality
6 benefits that this system brings to the hospital. So lower
7 length of stay, less narcotics, back to normal activity faster
8 so the patient experiences less pain in recovery. And those
9 can lead to cost avoidance on a per-case basis that the
10 hospital then can consider in whether they want to add the
11 capital equipment or do more da Vinci surgical procedures.

12 **Q.** So does this kind of comparison tell you anything as an
13 economist about whether Intuitive's prices are being
14 constrained by competition from open and lap surgeries?

15 **A.** This is the margin on which they are competing. So this
16 is where -- this is what is affecting their pricing.

17 **MR. MICHAEL:** Let's go to the next slide, please.

18 (Document displayed.)

19 **BY MR. MICHAEL:**

20 **Q.** You said that Intuitive faces competition and its prices
21 are constrained by competition from open and lap surgeries.

22 If that's correct, how do you explain the profit margins
23 that Intuitive earns on the da Vinci and EndoWrists?

24 **A.** I think it's important to understand that as a matter of
25 economics, no level of margin indicates monopoly power.

1 So you have to consider whether that level of margin,
2 whatever it may be, is a competitive outcome or a monopoly
3 outcome. And that can vary across industries.

4 And there are some very important factors as to why you
5 might expect higher price cost margins in an industry like this
6 where R&D is very important and the investments that they are
7 making are very risky than you would in a market for soybeans.

8 **Q.** Did the contribution margins that Dr. Lamb talked about in
9 his testimony take into account Intuitive's investments in R&D
10 or the risks that Intuitive faced in its business?

11 **A.** No. And just to explain what that means, the R&D is not
12 taken into account in those contribution margins.

13 What is also not taken into account is when Intuitive
14 makes an investment, they don't know whether that investment is
15 going to be successful or not. And they have risks associated
16 with it.

17 It may be there is just a one in three chance that a
18 certain investment is going to be successful. And if that's
19 the case, then the margin that they need to earn to justify
20 that investment on the back end is three times as high as it
21 would be in the absence of that risk.

22 **Q.** The jury has been shown a couple documents in this case in
23 which Intuitive is referred to as a monopoly.

24 Did you consider any of those kinds of documents in
25 forming your opinions?

1 **A.** Yeah. I looked at them. I mean, the -- you know, the
2 word "monopoly" is thrown around a lot.

3 If what -- what I'm considering is whether they have
4 monopoly power in a relevant antitrust market or not, and I'm
5 considering what that relevant antitrust market is. I don't
6 ignore those documents, but I consider them for what they are.

7 **Q.** So did those types of documents affect your conclusions or
8 opinions in this case?

9 **A.** No, because in the context of the broader record,
10 Intuitive's conduct and their continuing behavior, investment
11 in R&D, pricing, quality, is not consistent with monopoly.

12 **MR. MICHAEL:** Let's go to Slide 32, please.

13 (Document displayed.)

14 **BY MR. MICHAEL:**

15 **Q.** Now, SIS has also claimed in this case that there is a
16 second relevant market for EndoWrist repair and replacement.

17 Did you form some opinions regarding that alleged relevant
18 market?

19 **A.** Yeah. Again, I think it's inconsistent with the way that
20 Intuitive goes to market and how they compete. They are not
21 competing in this alleged EndoWrist repair and replacement
22 market that Dr. Lamb has posited.

23 **Q.** And can you summarize what the opinions were that you
24 formed specifically with respect to that allegation of a
25 relevant market in Endowrist?

1 **A.** You know, segregating that market off or delineating it
2 ignores the fact that when the product is sold to hospitals,
3 they know up front not only are they buying a piece of capital
4 equipment, they are also committing to buying a stream of
5 instruments, either from Intuitive or someone authorized by
6 Intuitive, that they can consider when making that purchase.
7 And that's -- that's determined when they sign the contract.

8 **Q.** So in your opinion, are -- is EndoWrist repair and
9 replacement its own separate product market or are EndoWrists
10 part of a single surgical system that competes against open and
11 lap?

12 **A.** It's not a relevant market here. I mean, the relevant
13 market here is a market for surgical solutions.

14 **MR. MICHAEL:** Let me go to -- ask Mr. Lee to go to
15 Slide 33, please.

16 (Document displayed.)

17 **BY MR. MICHAEL:**

18 **Q.** So far we have been talking mostly about the impact of
19 Intuitive's conduct on competition. I now want to talk to you
20 briefly about whether Intuitive caused any injury or damages to
21 SIS.

22 And, first, just to be clear, does your opinion that
23 you've just explained to the jury that Intuitive's conduct was
24 good for competition, does that depend in any way on what
25 effect that conduct had on SIS's sales or profits?

1 **A.** No. I mean, it -- it's looking at whether they have
2 adversely affected competition. Competition laws protect --

3 **Q.** I don't want you to give a legal opinion. But if you
4 could just speak about it as a matter of economics, please.

5 **A.** As a matter of economics, we would be looking at whether
6 competition is harmed, not an individual competitor.

7 **Q.** Did you, nevertheless, go on to consider in your analysis
8 whether or not Intuitive's conduct actually did cause SIS to
9 lose sales or profits?

10 **A.** Sure. Setting aside what I just said, that it didn't harm
11 competition, which would mean there was not injury, just
12 considering whether SIS itself was harmed in some way, I don't
13 see reliable evidence that that happened.

14 **Q.** Okay.

15 **MR. MICHAEL:** Let's go to the next slide, please.

16 (Document displayed.)

17 **BY MR. MICHAEL:**

18 **Q.** And I want to ask you about some of the specific opinions
19 you reached on that topic.

20 First of all, did you see any reliable economic evidence
21 in this case that absent Intuitive's policies, some number of
22 hospitals would have converted to buying their EndoWrists from
23 SIS specifically?

24 **A.** No. I mean, SIS is a distributor, and it had very few
25 distributions before they filed this lawsuit.

1 **Q.** The jury has heard evidence about the fact that Rebotix
2 owned a patent on its process for resetting EndoWrists. You're
3 familiar with that?

4 **A.** Yes.

5 **Q.** How did that affect your opinions, if at all, as to
6 whether Intuitive's conduct caused SIS injury or damages?

7 **A.** Well, I think they were dependent on Rebotix for anything
8 they were going to be able to do in the marketplace. And
9 Rebotix had a lot of options for distribution of its product.

10 And so I just don't think that the -- that the
11 essentiality of SIS that was put forward by Ms. Sergeant and
12 Mr. Bero is supported by the record.

13 **Q.** And, finally, Mr. Bero testified that of the \$140 million
14 in damages that he calculated, all but around 3 million of that
15 was attributable to X and Xi model EndoWrists.

16 How, if at all, did that affect your opinions regarding
17 SIS's claimed damages in this case?

18 **A.** I mean, I think that requires a fair bit of speculation,
19 because no one had a -- no one had a reset program for the X
20 and Xi. Rebotix didn't. Restore didn't. SIS didn't have one
21 for the Si, let alone the X/Xi.

22 So I think it just makes those damages the lion's share of
23 the damages have been put forward by the plaintiff very
24 speculative.

25 **MR. MICHAEL:** Your Honor, I may be just about done.

1 And we're at least a good stopping place. I see it's 12:30.

2 As far as I'm concerned, I just wanted to check with the
3 Court whether you would like me to stop here.

4 **THE COURT:** Mr. Michael, depending how much you have,
5 I would urge you to go ahead and finish. But you tell me how
6 much you have left.

7 **MR. MICHAEL:** I don't think very much at all. If I
8 could have one moment to confer with my team.

9 **THE COURT:** By all means.

10 (Discussion held off the record between defense
11 counsel.)

12 **BY MR. MICHAEL:**

13 **Q.** So, Dr. Smith, if I could just ask you to go to the very
14 last slide in your demonstratives and just summarize briefly,
15 to go back to the overarching question that we started with:
16 What did the economic evidence show in this case to you, as an
17 economist, about whether Intuitive's conduct was
18 pro-competitive or anticompetitive?

19 **A.** In my opinion, based on the evidence that I've reviewed,
20 Intuitive has continued to innovate at a very high and
21 increasing level. The quality of their product has continued
22 to improve and the price of their product has not increased.

23 All of those things are consistent with them competing
24 vigorously with lap and open and behaving competitively and not
25 as a monopolist.

1 Q. Thank you, Dr. Smith. That's all the questions I have
2 right now.

3 THE COURT: Thank you, Mr. Michael.

4 We're going to go ahead and take our lunch break here.

5 Mr. McCaulley, I will ask you to pick it up when we come
6 back.

7 MR. McCaulley: Thank you.

8 THE COURT: Folks, it's a little past 12:30 now.

9 Let's plan to come back at 12:15? Well, let's call it 12:20.
10 I will -- better you all have a couple extra minutes.

11 A reminder -- don't run away yet. A reminder, please, to
12 not discuss anything related to the case amongst yourselves or
13 with anyone else and not to engage in any independent research.
14 And that if anyone tries to speak with you about the case, to
15 please -- to please let us know.

16 And thank you to the jurors who were pointing me at the
17 clock. Yes, I do mean 1:20, not 12:20. Thank you all.

18 Everyone rise for the jury.

19 (Jury exits the courtroom at 12:34 p.m.)

20 THE COURT: You may be seated.

21 Thank you, Dr. Smith, you may step down.

22 (Witness steps down.)

23 THE COURT: Before anything else, one of the exhibit
24 tags from the EndoWrist's fell off. So I want them -- if I
25 could ask you to pass this back. Please reattach it. Thank

1 you.

2 **MR. MICHAEL:** We will do that. Thank you, Your Honor.

3 **THE COURT:** Folks, this morning, right, we were still
4 talking a little bit -- I think Mr. McCaulley had asked me what
5 I was envisioning in terms of charging the jury and the opening
6 arguments [sic]. I just want to address that briefly and
7 actually give you all your lunch break here.

8 Mostly I would reiterate what I have shared with you all
9 already, which is I understand -- I think it's the best
10 practice and I understand you all have asked to have the jury
11 charged before you give your opening arguments.

12 So, really, what I think is left undetermined at this
13 point is whether -- whether rebuttal is happening Monday or
14 we'll be done today.

15 **MR. McCAULLEY:** I don't think -- I do still think that
16 I would like a short rebuttal case, Your Honor.

17 And if we start back at 1:20, I'm not even positive I will
18 be done with my cross of Dr. Smith by 2:30, but it will be
19 close to 2:30 if I'm to finish today.

20 So we would still want some time on Monday. I think it
21 would be very brief, but -- but I'm -- at this point, I can't
22 say that I'm waiving my right to a short rebuttal.

23 **THE COURT:** Nor am I necessarily -- I'm not asking to
24 you, Mr. McCaulley.

25 **MR. McCAULLEY:** I didn't understand you to be, Your

1 Honor.

2 **THE COURT:** Why don't we go ahead and take the 45
3 minutes or so we've got for lunch and come back.

4 Let me sketch out a few more things for you all. Since I
5 do have your submissions about the jury instruction proposals
6 that either are no longer in play or that have been withdrawn,
7 we're putting together a charge. And so we had already started
8 to put together a charge, but we are finalizing a charge to
9 share with you all to be able to discuss -- or at least to get
10 some reactions and let you make any further record that you
11 want beyond the submissions about the final instructions, as
12 I've started to lay them out.

13 So what I think -- what I think this means -- part of what
14 I think is hard to figure out is if you have rebuttal for
15 Monday, the jury will come in. They will hear your rebuttal.
16 At that point, we will see what time there is in the day.

17 My sense is there needs to be enough time -- I'm going to
18 keep noodling this, but I'm realizing that it may just make
19 sense to ask them to come late because my sense is -- and you
20 all tell me otherwise, but my sense is whatever rebuttal you
21 may have, Mr. McCaulley, isn't necessarily going to change the
22 instructions. I appreciate the shaking of the head.

23 **MR. VAN HOVEN:** Shook my head no.

24 **THE COURT:** You know what I'm doing. Exactly.

25 So it may be that we do the charge -- the charge -- or our

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1 charge conference in the morning. Then we'll have you come --
2 I can at least ask the jury to come in a little bit later. We
3 can pause after your rebuttal case. I can hear any renewed
4 motion for judgment as a matter of law. I can charge them. My
5 sense is that that might put us at about the lunch hour.

6 If not, then we'll start with opening arguments and sort
7 of figure out how to get that all in there so that the jury can
8 start on Monday, if I have -- if my piecing of it is about
9 right.

10 **MR. McCAULLEY:** So we would give our closings on
11 Monday then?

12 **THE COURT:** I think so. I think that's how it would
13 all game out.

14 **MR. McCAULLEY:** I think that would require us to
15 exchange our opening slides tomorrow. I don't think we will be
16 in a position to be ready by tomorrow.

17 I had envisioned closing on Tuesday and exchanging of the
18 slides on Sunday. But if Your Honor has any guidance on that.

19 **THE COURT:** Mr. McCaulley, we have been talking about
20 possibly -- I think since yesterday there has been on the table
21 that -- that -- I see.

22 The idea would that be opening statements would happen on
23 Tuesday -- I'm sorry. Closing statements might happen on
24 Tuesday. This may just require -- I don't want to burden more
25 of the jury's time, so it may simply require turning that

1 around more swiftly. You all turning around those slides more
2 swiftly than we have been doing, but let me think on that.

3 Mr. Gallo, thank you for your patience. What have you
4 got?

5 **MR. GALLO:** Two observations.

6 Beginning at the end, it seems to me, assuming it would be
7 acceptable to the Court, that we could exchange slides sometime
8 Sunday. Hopefully, resolve most of the differences, and have a
9 very limited set of issues for Your Honor on Monday morning.

10 So, for example -- I mean, I could -- I would be prepared
11 to do it Saturday. I don't have a problem with that. But if
12 Mr. McCaulley wanted some time on Sunday, maybe noon on Sunday,
13 that would give us time to work out our differences and be
14 ready to present any issues to Your Honor first thing Monday
15 morning.

16 Second issue is, I would respectfully request that we do
17 everything possible to finish the cross examination of
18 Dr. Smith today, even if it means we -- the jury needs to stay
19 a little later because it will save so much effort and time on
20 Monday.

21 And I know that this is a personal issue, but, you know,
22 Dr. Smith has been here for much of the trial and he's got
23 three young children. And I would hate to see him held over
24 for, essentially, four more -- three or four more days over a
25 half hour or something. I mean, it just seems we ought to be

1 able to finish cross today.

2 I also think it's fairer, to be honest, that the cross
3 finish today.

4 **THE COURT:** While I mull that over, before we come
5 back we'll ask the jurors if that's an option.

6 In all candor, given sort of where we are in the trial, on
7 the chance that you might have been prepared to start rebuttal,
8 any rebuttal you might have, I was thinking that it might make
9 sense to try and ask them to stay a little later.

10 So why don't we -- why don't we do this? I will -- I hope
11 that they have fled maybe not the building, but at least the
12 room to get some fresh air. But before -- before -- when they
13 are all back, we can query whether or not that's an option,
14 just to know.

15 **MR. GALLO:** I appreciate it, Your Honor. And two
16 other things.

17 Again, if there is going to be a rebuttal case on Monday,
18 I would appreciate some notice as to what it will be, for
19 example, this evening so we can prepare. I don't know who the
20 witness would be, for example, who is going to testify.

21 And just so that there is no mistake, we have 25 minutes
22 of video testimony. But that I think would fit within Your
23 Honor's plan for finishing up quickly on Monday. It's only 25
24 minutes.

25 **THE COURT:** Mr. Gallo, the 25 minutes would be today;

1 right?

2 **MR. GALLO:** Well, if we can do it today, it would be
3 great. I'm a little worried that we might not be able to
4 without holding the jury.

5 Of course it all depends on the length of the cross
6 examination.

7 **THE COURT:** I see. I see. The video might be --
8 okay. I understand it. All right.

9 **MR. GALLO:** Thank you. Appreciate it.

10 **THE COURT:** Thank you, counsel. We'll see you all at
11 five minutes before I told the jury to come back. 1:15.

12 Thank you all.

13 (Whereupon at 12:42 p.m. proceedings were adjourned
14 for noon recess.)

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Friday January 24, 2025

1:17 p.m.

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(Proceedings held in open court, outside
the presence and hearing of the jury.)

THE COURT: You may be seated.

Folks, really quickly, there were not a sufficient number of jurors yet to ask them if they can stay late. So I don't have any update for you on that yet, but will soon.

I wanted to share my thinking with you about Monday, Tuesday and sort of how to play these things out.

So I do want to get us started as quickly as possible to give Mr. McCaulley time with his cross -- for his cross with Dr. Smith.

Any redirect you might have, Mr. Michael, we'll find out how late we can go with that. But in the end, that's very -- I imagine that's very likely where we'll stop today.

Monday we'll come back. We will play the videos, unless we get them to them today. But on the chance that we don't, we will play the videos on Monday. You will get an opportunity to put on any rebuttal case you might have, Mr. McCaulley. And I'm thinking at that point we possibly send the jury home to give us enough time to hear the motion, talk through the charge.

Because I don't love the idea of starting -- I don't love

1 the idea of charging them, and I don't think there will be
2 enough hours left in the day for them to hear both closing
3 arguments.

4 Go ahead.

5 **MR. McCAULLEY:** Mr. Gallo and I had exactly the same
6 conversation and reached exactly the same conclusion.

7 **THE COURT:** Great minds.

8 **MR. GALLO:** That's all fine. And Mr. McCaulley
9 represented to me that he's hopeful that his cross will end
10 around 2:30 or 2:45 or something.

11 And, obviously, I'm not -- the only reason I say that,
12 Your Honor, is the question I would then present to the Court
13 and -- I'm not sure we care, but we could either do our 25
14 minutes of video today, if the jury was able to stay until 3:00
15 or 3:15, and rest and then Mr. McCaulley could do his rebuttal
16 on Monday, or we could hold the videos and play them first
17 thing Monday morning. I'm not sure I care.

18 **MR. McCAULLEY:** Your Honor, I shared this with
19 Mr. Gallo.

20 My rebuttal case, I currently intend it to be two
21 witnesses, Mr. Posdal and Dr. Lamb. And I would be shocked if
22 the direct portions of that would be more than -- I never want
23 to undershoot. I was going to say 20 minutes, but I would say
24 half-hour. Very limited.

25 I disclosed the issue to Mr. Gallo that Dr. Lamb would

1 talk about. We would get him on and off the stand. I think
2 the video and that would take an hour, plus cross, plus cross.

3 If you played the video --

4 THE COURT: I'm going to stop you all only for this
5 jury.

6 MR. GALLO: You want the jury.

7 THE COURT: Exactly. I want the jury. I want to give
8 us all a fighting chance to get Dr. Smith on his way.

9 And, also, from what you're describing, it actually may
10 make sense to hold the videos just because if they are going to
11 have to come on Monday, they might prefer that. Otherwise,
12 we're just bringing them in for --

13 MR. McCARLLEY: Thank you.

14 THE COURT: Let's all rise for the jury.

15 MR. McCARLLEY: I apologize for the catty-wampus this
16 morning.

17 THE COURT: That's all right.

18 MR. McCARLLEY: I will get the cross examination done.
19 I would be shocked if it took -- it may be 2:15 or sooner, if
20 we have a break.

21 THE COURT: For what it's worth, Mr. McCaulley, I
22 wasn't thinking we would take one. This is only about an hour
23 or so. I'm hoping we can go to 2:30.

24 MR. McCARLLEY: I'm not going to go past 2:30. Give
25 me the hook.

1 (Jury enters the courtroom at 1:23 p.m.)

2 **THE COURT:** You may be seated.

3 And, Mr. McCaulley, you're welcome to start your cross.

4 **MR. McCAULLEY:** Thank you, Your Honor.

5 **CROSS-EXAMINATION**

6 **BY MR. McCAULLEY:**

7 **Q.** Okay. We both have our glasses on.

8 Dr. Smith, I hopefully don't have too much. One of the
9 disagreements that you have with Dr. Lamb is about the
10 definition of the "relevant market;" right?

11 **A.** That's correct.

12 **Q.** And you say that the relevant market is all the surgical
13 procedures that are done in the United States; is that fair?

14 **A.** I think it's probably better defined as surgeries where
15 the da Vinci surgical system is competing.

16 **Q.** And that would be against open surgeries, for example?

17 **A.** Other modalities: Open, lap, even now solutions that
18 don't require surgery.

19 **Q.** I didn't hear anything about that on your direct exam.
20 What do you mean by "solutions that don't require surgery"?

21 **A.** I mean, I think it's become more prevalent recently that
22 in addition to surgical solutions, that there are other
23 solutions. It's not -- it's not a big part of the market, but
24 there are other options for patients.

25 **Q.** You're just being complete. But the main point of your

1 testimony was that the robot competes with open and lap; is
2 that fair?

3 **A.** That the surgical solution, yeah, the entire solution
4 competes with lap and open.

5 **Q.** Now, when the da Vinci was first introduced in early
6 2000s, MIST surgical robots was a brand-new category; correct?

7 **A.** Was an innovation, was a new mode of doing surgery.

8 **Q.** So it was new to the market, a new entry to surgical
9 solutions in the United States. That's fair; right?

10 **A.** It was a new option for getting a surgery done.

11 **Q.** And that fact is supported -- one of the things you looked
12 at was Intuitive Surgical's substantial patent portfolio; is
13 that correct?

14 **A.** I understand they have one.

15 **Q.** And they had one at the time that they first entered the
16 market; correct?

17 **A.** I'm not sure it's the same, but they have had a patent
18 portfolio.

19 **Q.** And that patent portfolio, you understand from your work
20 in the economic field, patents give an innovator a period of
21 exclusivity in the market; right?

22 **MR. MICHAEL:** Objection, calls for a legal conclusion.

23 **THE COURT:** Well --

24 **A.** They have been --

25 **THE COURT:** Hold on.

1 **MR. McCAULLEY:** Give her a second.

2 **THE COURT:** Can you answer that based on your work
3 experience?

4 **THE WITNESS:** I'm not a patent --

5 **THE COURT:** Understood. Can you answer that given
6 your economic expertise?

7 No. It's fine, just...

8 **THE WITNESS:** I mean, I can tell you as a layman my
9 understanding of patents.

10 **MR. McCAULLEY:** Let me ask a few foundational
11 questions, Your Honor. I will withdraw my question.

12 **THE COURT:** That's fine. Thank you.

13 **BY MR. McCAULLEY:**

14 **Q.** Have you ever testified in a patent case before?

15 **A.** I have not.

16 **Q.** Do you have any understanding as to what the economic
17 effect of patents are in an economic market?

18 **MR. MICHAEL:** Objection. Vague.

19 **THE COURT:** Do you understand the question, Dr. Smith?

20 **THE WITNESS:** He's asking if I understand what a
21 patent is. I mean, I think I understand that it keeps firms
22 from copying certain things that a firm does when -- when
23 developing a solution for something.

24 **BY MR. McCAULLEY:**

25 **Q.** Okay. And when Intuitive first introduced its MIST

1 surgical robots in the United States, there were substantial
2 patents surrounding it. That's your understanding; right?

3 **A.** I understand they had patents.

4 **Q.** Well, when you have a new and emerging technology like
5 MIST surgical robots, when it first enters the market, it's
6 obviously going to compete for a place in the market; correct?

7 **A.** Yes, and it has continued to do so.

8 **Q.** And the MIST surgical robot, when it was introduced, the
9 da Vinci Standard, it was the only robot in the United States
10 for surgeries; correct?

11 **A.** It was a new way of doing surgeries that competed with
12 more traditional methods.

13 **Q.** And it's logical, isn't it, that at the time that
14 Intuitive entered into the market, it was going to try and
15 demonstrate the reasons why the robot should be used instead of
16 other surgical modalities; correct?

17 **A.** Yeah, and I think it continues to do that.

18 **Q.** And you don't disagree that Intuitive touts the da Vinci
19 robot as better than other surgical modalities; correct?

20 **A.** It tells the market what it offers relative to those other
21 modalities.

22 **Q.** And it says that it's better than those other modalities;
23 correct?

24 **A.** I think there are features of it that are superior. I
25 think that's what I shared earlier with that demonstrative.

1 **Q.** And Intuitive touts those benefits of robotic surgery over
2 the other modalities, correct?

3 **A.** That's how it competes. That's part of how it competes.

4 **Q.** It competes -- we have some documents if we need to, but
5 it competes on better outcomes; right?

6 **A.** I think it highlights certain things that it is able to
7 achieve by being sort of less invasive than alternatives.

8 **Q.** And you have been here throughout the testimony and heard
9 the benefits that Intuitive says come with the use of the robot
10 in surgery; right?

11 **A.** Yeah. I've heard about the quality of the product.

12 **Q.** And you were here for Dr. Curet's demonstration of the
13 robot?

14 **A.** I saw a portion of that, yep.

15 **Q.** And her testimony about the fact that she experienced two
16 revolutions in her career?

17 **A.** I think I've seen documents that say that.

18 **Q.** And she testified to it on the stand, that she's been here
19 for what she called the laparoscopic revolution and a robotic
20 revolution; correct?

21 **A.** That's the way she described it, yes.

22 **Q.** And you don't have any reason to disagree with Dr. Curet,
23 do you?

24 **A.** These are differentiated products.

25 **Q.** The differentiated products, they tout the benefits or the

1 ergonomic benefits to the surgeon; right?

2 **A.** They are describing the innovations that they are making.

3 **Q.** And Intuitive also touts the fact that the robot provides
4 faster recovery times; correct?

5 **A.** It does. And I think it continues to improve that.

6 **Q.** And I think you gave us a slide earlier today that -- I
7 believe the point was that patients that use -- that receive
8 robotic surgeries get less narcotics as part of the recovery.

9 Is that what you were pointing to?

10 **A.** That was what was on that slide, that they would require
11 less pain medication.

12 **Q.** And I don't know if you were here for some of the
13 testimony early on, but Dr. Mahal talked about the fact that
14 having a robotic surgery program was important for hospitals to
15 attract surgeons. Is that a factor?

16 **A.** I think it's a -- I think it's been described as a great
17 product.

18 **Q.** And I think you talked about the fact that robotic surgery
19 competes on cost; correct?

20 **A.** Yes, that's what the demonstrative I showed earlier was
21 illustrating.

22 **Q.** And it competes on cost by lowering the costs of
23 complications associated with surgery; correct?

24 **A.** Improving -- yeah, it improves outcomes. It lowers
25 narcotic costs. Those are benefits to the patient and to the

1 hospital that it then weighs against those other modalities.

2 **Q.** I'm not sure you specifically talked about it, but I think
3 I've seen it in your materials. It also has a much reduced
4 rate of conversions; correct?

5 **A.** I think that was on that slide, yeah. That by
6 conversions, they mean a surgery having to become an open
7 surgery. And da Vinci touts a lower rate of that.

8 **Q.** So when -- I think there were some benefits to shorter
9 hospitalization stays; correct?

10 **A.** That was on that slide, yes.

11 **Q.** Those aren't comparing costs of a robot to laparoscopic
12 equipment; fair?

13 **A.** Disagree. I think they are. I think they are saying how
14 much it costs to do the surgery using the da Vinci surgical
15 system and then the hospital can determine whether the cost of
16 the system is worth it relative to laparoscopy or open.

17 **Q.** So, think about the emergence of the new technology.
18 Obviously, initially it's going to take market share from other
19 modes of surgery; right?

20 **A.** I don't know if that's obvious, but, yes, that is what
21 happened.

22 **Q.** And if we think about when the automobile replaced a horse
23 and carriage, that was an advance in technology; correct?

24 **A.** Long ago.

25 **Q.** I wasn't there for it, but neither were you.

1 **A.** I still live around some of them.

2 **Q.** But you understand that as the new technology comes in, it
3 can be quite a bit different, but it can replace another mode
4 of transportation; correct?

5 **A.** Yeah. I mean, I think what you're describing is a
6 technological change that is a real -- that isn't ongoing.

7 What I showed in my report is that competition with open
8 and lap is ongoing.

9 **Q.** And the thing that Intuitive markets is its ability for
10 physicians to deliver superior outcomes; correct?

11 **A.** That's what it's explaining, yes; that it has the ability
12 to help the hospital achieve better patient outcomes, which
13 will help their reputation.

14 **Q.** So if the -- you didn't give any testimony that I heard
15 about the price discipline imposed by surgical robots on
16 laparoscopic towers or vice-versa; correct?

17 **MR. MICHAEL:** Objection. Mischaracterizes the
18 testimony.

19 **A.** And that's --

20 **THE COURT:** Hold on. Sorry. Sorry, Dr. Smith.

21 Overruled.

22 Go ahead, Dr. Smith.

23 **THE WITNESS:** Sorry. Can you repeat that question or
24 have it read back?

25 **MR. McC AULLEY:** Can we have the question read back?

1 (Requested portion of record read.)

2 **A.** It's not the way that Intuitive competes in the
3 marketplace, so it's not what I've studied.

4 I mean, I was looking at how -- I mean, they are
5 indirectly comparing the price of the da Vinci robot to
6 laparoscopic towers when they provide those -- quantify the
7 impact studies, because it allows the hospital to weigh the
8 relative cost of those different modes of surgery.

9 **BY MR. McCAULLEY:**

10 **Q.** So I think you anticipated my next question, and I think
11 it was kind of a light-hearted moment between me and Mr. Rosa.

12 We talked about the fact a hospital doesn't buy a new
13 robot every time they are going to perform a surgery; right?

14 **A.** Yeah. I think they use the robot.

15 **Q.** But they make a decision to buy a robot -- let me begin
16 again.

17 Intuitive's customers are the hospitals; right?

18 **A.** Yes.

19 **Q.** And they make that sale of the robot to hospital
20 administration; correct?

21 **A.** I mean, I think there's more to it than that. I think
22 that the hospital demand is derived from patient and physician
23 demand. And -- but yes, I think the direct connection is to
24 the hospital.

25 And as I mentioned earlier, there's sort of two levels of

1 competition that Intuitive is engaged in. The first is to get
2 the capital equipment into the hospital.

3 The second is to get them to perform surgery using the
4 da Vinci surgical system.

5 Q. And why do they want the hospital to use the robot once
6 it's in the system?

7 A. That's the whole point of the system, is to be used. And
8 they -- they want surgeries to be performed with it because
9 that allows them to sell more systems, sell more components of
10 the system.

11 Q. And sell more EndoWrists; right?

12 A. Well, they -- they -- that is part of the package that
13 they offer to hospitals. It's the surgical system that they
14 sell.

15 Q. And the more times the robot gets used, the more money
16 they make; right?

17 A. I mean, I think when they sell the system, they would like
18 for it to be used. And they anticipate a certain return from
19 the sale of EndoWrists as part of that.

20 Q. So if the robot gets sold and it just sits there,
21 Intuitive doesn't make any more money; right?

22 A. I don't think that's what they want, no.

23 Q. But you agree with me that they don't make any more money
24 if the robot doesn't get used?

25 A. I think they want the robot to get -- I think they want

1 the system to get used, not only because they make a return on
2 the EndoWrist, which is part of the business model they have
3 had from the beginning, but also because that -- the more
4 successful surgeries they have with that system, the more
5 systems they sell.

6 **Q.** There's no fixed relationship between the number of
7 EndoWrists that a hospital will use at the time they enter into
8 the Sales License and Service Agreement with Intuitive when
9 they purchase the robot; right?

10 **A.** They purchase the robot and the EndoWrist -- or the
11 contract for the EndoWrist at the same time when they sign a
12 deal with the hospital. And the hospital is able to at that
13 point forecast how much they are going to use the system based
14 on its effectiveness and determine what their expenditure on
15 EndoWrists might be.

16 **Q.** And that will be subject to the real world, how many times
17 a robot gets used, which I think is one of the things I think
18 you said was a consideration for Intuitive after the sale;
19 right?

20 **A.** And I think that the amount that a given hospital spends
21 on the da Vinci surgical system will vary with the number of
22 surgeries that they perform.

23 **Q.** I think you testified with Mr. Michael, but I'd just like
24 to explore it a little bit.

25 Mr. Michael didn't show you any, but he did ask you about

1 how Intuitive referred to who it considered to be its
2 competition in some of its internal documentation; correct?

3 **A.** Yeah. As I said, I've seen a lot of documentation about
4 them competing with lap and open. Yeah.

5 **MR. McCAULLEY:** Your Honor, I'd like to, I believe,
6 offer for the first time Trial Exhibit 515.

7 I don't have a notebook, but may I hand a copy to the
8 witness?

9 **THE COURT:** Hang on one second.

10 Any objection, Mr. Michael?

11 **MR. MICHAEL:** Yes, Your Honor. I believe we do have
12 objections to this document. I would like to see a copy of it,
13 if I could.

14 (Document was shown to the counsel.)

15 **MR. MICHAEL:** So, Your Honor, I'm not sure there's a
16 foundation to offer the exhibit into evidence right now; but
17 subject to that, I guess I'd ask to see if Mr. McCaulley can
18 lay a foundation for the document.

19 **MR. McCAULLEY:** Sure. Your Honor, on direct
20 examination, the witness was asked if he had seen internal
21 documents about how Intuitive referred to its competition.
22 This is an internal document that makes the statement.

23 **MR. MICHAEL:** That was not the question to Dr. Smith,
24 Your Honor.

25 **THE COURT:** May I see it?

1 (Whereupon document was tendered to the Court.)

2 **THE COURT:** Members of the jury, I'm going to give you
3 all a five-minute break while we sort this out. Can you plan
4 to be back -- well, we'll come get you about ten to 2:00.

5 All rise for the jury.

6 (Jury exits the courtroom at 1:43 p.m.)

7 **THE COURT:** Thank you, Dr. Smith.

8 (Witness steps out.)

9 **THE COURT:** For the record, Dr. Smith is leaving.

10 You may all be seated.

11 I have a copy of -- I've got a copy of Dr. Smith's report.
12 I guess I just want to go back.

13 Mr. McCaulley, the question I think you're referring to,
14 or maybe the line of questioning you're referring to is when
15 Mr. Michael asked him about how Intuitive describes who its
16 competition is or who it competes with; is that right?

17 **MR. McCAULLEY:** I believe so, Your Honor. I can get
18 it from the real time.

19 **THE COURT:** I may ask you. I think --

20 Mr. Michael, can you make more pointed for me your
21 objection to this?

22 **MR. MICHAEL:** Sure, Your Honor. I -- first of all, I
23 don't think I asked that sort of big broad question of
24 Dr. Smith. But in any event, no foundation has been laid for
25 this document.

1 I just checked, and it does not appear to be a document
2 that's on Dr. Smith's materials relied-upon list.

3 Similar issue came up during Dr. Lamb's testimony, and
4 Your Honor sustained an objection based on foundation to a
5 document that Dr. Lamb had not seen before and did not rely on.
6 And so it's really the same issue here.

7 **THE COURT:** Let me ask you, Mr. McCaulley. I think I
8 found it now. Is it at Exhibit B in his report, the documents
9 he examined?

10 **MR. MICHAEL:** That's correct, Your Honor.

11 **THE COURT:** Mr. McCaulley, do you -- how do you intend
12 to lay a foundation?

13 **MR. McCAULLEY:** I can simply ask him if he's seen the
14 document before. If he says no, Your Honor, I can move on. I
15 believe it was one of the materials considered in Dr. Lamb's
16 report, and he indicated he reviewed Dr. Lamb's report.

17 **MR. MICHAEL:** Well, Your Honor, the same thing was
18 true of the exhibit that I tried to introduce with Dr. Lamb.

19 **THE COURT:** All right. So let's do this. I don't see
20 it listed in -- it is not among the Bates stamped documents
21 that are listed in his report.

22 Mr. McCaulley, if you want to show it to him and ask him
23 if he's seen it to lay a foundation, I will allow that. And if
24 he says no, you're going to move on.

25 **MR. McCAULLEY:** Can I identify it as a document relied

1 on by Dr. Lamb?

2 **THE COURT:** Excuse me?

3 **MR. McCaulley:** May I identify it as a document relied
4 on by Dr. Lamb?

5 You know, I'll just ask him if he's seen it before.

6 **THE COURT:** Thank you.

7 And while we have the odd fortune of not being in the
8 presence of the jury, let me share with you all that they
9 indicated that they could stay a few minutes past 2:30 today,
10 which is why I felt comfortable excusing them for a few minutes
11 to do this.

12 **MR. McCaulley:** My cross won't go that long, Your
13 Honor.

14 **THE COURT:** I'm just letting you know in case. I'm
15 letting you know that that -- that past 2:30 is on the table
16 should we need it.

17 This is a conversation we were having when they were
18 brought in last time. That said, my inclination would still be
19 to have Intuitive do the videos on Monday just so that they
20 don't come in for next to nothing, if it's for just the
21 rebuttal on Monday, so that there's a little something that
22 hangs over.

23 **MR. GALLO:** Whatever Your Honor decides is fine.

24 **THE COURT:** Thank you, Mr. Gallo.

25 Whose copy -- Mr. McCaulley, do I have your copy of Trial

1 Exhibit 515?

2 **MR. McCaulley:** I think so.

3 **THE COURT:** Let me pass it back just in case. Let's
4 go ahead and bring Dr. Smith back.

5 (Dr. Smith enters the courtroom)

6 **MR. McCaulley:** I'm sorry, Your Honor. I didn't mean
7 to hijack the proceedings.

8 **THE COURT:** You didn't. I'm trying to let them take
9 those little breaks when they can.

10 And, Alexis, if you can go grab them. Thank you.

11 (Jury enters the courtroom at 1:48 p.m.)

12 **THE COURT:** You may be seated.

13 Go ahead, Mr. McCaulley.

14 **MR. McCaulley:** Thank you, Your Honor.

15 May I approach the witness?

16 **THE COURT:** You may.

17 (Whereupon document was tendered to the witness.)

18 **BY MR. McCaulley:**

19 **Q.** I've handed the witness what we've marked for
20 identification purposes as Trial Exhibit 515.

21 My question to you: Is this a document that you've seen
22 before, Dr. Smith?

23 **A.** Yes, I have seen this.

24 **Q.** I want to direct your attention --

25 **MR. McCaulley:** Your Honor, I move Trial Exhibit 515

1 into evidence and request permission to publish it.

2 **MR. MICHAEL:** No objection, Your Honor.

3 **THE COURT:** It's admitted, and you may publish it.

4 (Trial Exhibit 515 received in evidence)

5 **MR. McCaulley:** Thank you.

6 Mr. Cox, can we have this document called up, please.

7 And can you highlight the middle paragraph there that
8 starts with "Re: Your list below."

9 (Document displayed.)

10 **BY MR. McCaulley:**

11 **Q.** Dr. Smith, the document says [as read] :

12 "Re: Your list below. Most of them are
13 considered competitors, but I believe the ones in red
14 are not direct competitors since they do not do soft
15 tissue robotic surgery ."

16 Did I read that correctly?

17 **A.** Yes.

18 **Q.** This is from a Larry Cesnik at Intuitive Surgical,
19 correct?

20 **A.** Yes.

21 **Q.** So this would be an indication of how Intuitive viewed
22 itself in terms of who its competitors are; correct?

23 **A.** This particular conversation, as I've said, I've seen a
24 lot of documents and most of them are talking about their
25 competition with open and lap. This is talking about something

1 different.

2 **Q.** I have another document I'd like to show you.

3 In your studies in this case, did you become familiar with
4 testimony from Mr. Glynn Vavoso of Intuitive Surgical?

5 **A.** I know the name, and I've read some of his deposition
6 transcripts, I believe.

7 **Q.** Have you looked at and considered any of Mr. Vavoso's
8 documents in connection with this case?

9 **A.** I don't know that I've seen all of his documents. I have
10 seen some.

11 **MR. VAN HOVEN:** Your Honor, I'd like to offer Trial
12 Exhibit 536-R.

13 May I show a copy to the witness, Your Honor?

14 **THE COURT:** Let's wait to hear from counsel.

15 **MR. MICHAEL:** No objection, Your Honor.

16 **THE COURT:** It's admitted, and you may approach the
17 witness to share it with him.

18 (Trial Exhibit 536-R received in evidence)

19 (Whereupon document was tendered to the witness.)

20 **THE COURT:** Would you like to publish it,
21 Mr. McCaulley?

22 **MR. McCaulley:** I'll ask a foundational question
23 first, Your Honor.

24 **BY MR. McCaulley:**

25 **Q.** Have you seen this document before in your studies of this

1 case, Dr. Smith?

2 **A.** I believe so, yes.

3 **MR. McCAULLEY:** And I would like to publish it, Your
4 Honor. And I would ask --

5 **THE COURT:** You may.

6 **MR. McCAULLEY:** Thank you.

7 I'd ask Mr. Cox if he can put up Page 3 of 3 and highlight
8 that last sentence, Paragraph 12.

9 (Document displayed.)

10 **BY MR. McCAULLEY:**

11 **Q.** Do you understand, Dr. Smith, what Mr. Vavoso's position
12 is with Intuitive?

13 **A.** I forget his title.

14 **Q.** The jury has already seen testimony from him. Do you
15 recall what department he works in?

16 **A.** I think I&A.

17 **Q.** What's that?

18 **A.** I think Instruments and Accessories, I believe.

19 **Q.** If you look at what the statement says under Paragraph 12,
20 it says, quote [as read]:

21 "We do not see ourselves in competition with
22 laparoscopy. It's about the right tool for the right
23 job."

24 Do you see that?

25 **A.** Yeah.

1 **Q.** Is this a document you considered in reaching your
2 opinions about how Intuitive viewed itself and who its
3 competitors were?

4 **A.** Yeah. I mean, this document, in particular, is
5 interesting because this looks like preparation for a panel.
6 And you're highlighting one part of it that really is
7 inconsistent with other parts of it. There are other questions
8 in this document where his answers are: We have had
9 competitors since the beginning. Where he's referring to lap
10 and open.

11 **Q.** But you'll agree with me he did say in Paragraph 12 that
12 laparoscopy is not considered competition; correct?

13 **A.** Yeah. I don't know -- I would be interpreting to try to
14 understand what he meant by that in the context of the broader
15 document, where he talks about facing competition since the
16 beginning.

17 **Q.** I want to talk to you a little bit about Dr. Lamb's
18 conclusions on the relevant market.

19 **A.** Sure.

20 **Q.** From 1999 through 2018, approximately, Intuitive was the
21 only firm selling MIST surgical robots in the United States;
22 correct?

23 **A.** Yeah, I don't know when Medrobotics might have sold -- it
24 sounds right. I'll accept that.

25 **Q.** So if Dr. Lamb is correct that MIST surgical robots are a

1 relevant antitrust market, then since 1999 Intuitive has had
2 market power in that relevant market.

3 You would agree with that; right?

4 **MR. MICHAEL:** Object to the form.

5 **THE COURT:** Sustained. It's compound. It's just a
6 lot.

7 Can you break that down a little, Mr. McCaulley?

8 **MR. McCaulley:** I will break it down.

9 **BY MR. McCaulley:**

10 **Q.** If Dr. Lamb is correct that MIST surgical robots are a
11 relevant antitrust market, then Intuitive has market power in
12 that market; correct?

13 **A.** These kind of questions are always hard, counsel, because
14 you're asking me to disagree with my own opinion about what the
15 relevant market is, and then accept his opinion, and then give
16 you a -- I don't disagree with his arithmetic, let's just put
17 it that way. It's not that I disagree with. I disagree with
18 his definition of the market.

19 **Q.** I'm just trying to be clear. I'm not asking you to agree
20 with Dr. Lamb. I know you have a difference of opinion. But
21 if the jury feels Dr. Lamb is right, I just want to establish
22 that you agree that Intuitive's market share would constitute
23 market power?

24 **A.** But you're embedding in your question market share, and
25 that implies a market. So I'm saying I don't disagree with the

1 arithmetic. I disagree it's a market.

2 **Q.** I think we're saying the same thing. I should have gotten
3 to this earlier.

4 Your primary business is testifying in disputes like this;
5 is that fair?

6 **A.** I do a wide variety of consulting work. I consult on
7 regulatory matters in front of the FTC and the Department of
8 Justice. Increasingly I have been testifying more, but that
9 wasn't a very big part of my job when I started my career.

10 **Q.** But now that's a big part of your job; right?

11 **A.** It's become more of my job. I would say it's half or less
12 of the time that I do consulting work.

13 **Q.** Is it fair to say that in -- from the period 1999 to 2019,
14 Intuitive dominated the market for MIST surgical robots in the
15 United States?

16 **MR. MICHAEL:** Objection to form.

17 **A.** You keep saying the word "market" --

18 **THE COURT:** Hold on. Hold on. You've got to let me
19 rule on the objections.

20 **THE WITNESS:** Okay.

21 **THE COURT:** Overruled.

22 You can continue, Mr. -- Dr. Smith.

23 **A.** You keep saying the word "market" and then asking me to
24 accept something that you've said. I -- I just -- that makes
25 me want to reiterate that I don't agree that that's a market.

1 I don't disagree with his arithmetic.

2 **BY MR. McCaulley:**

3 Q. Okay. I'm not trying to get you to agree with his
4 conclusion. I just want to make sure we don't have to spend
5 more time on whether or not, if that's -- if that is a relevant
6 antitrust market, that Intuitive had market power in it.

7 **MR. MICHAEL:** I object to counsel's commentary, and
8 the question is asked and answered.

9 **MR. McCaulley:** I will withdraw it. I will withdraw
10 the question.

11 **BY MR. McCaulley:**

12 Q. With respect to the EndoWrist, do you agree there are no
13 functional substitutes for the repair and replacement of
14 EndoWrist surgical instruments?

15 A. No, I don't agree with that. Where the EndoWrists are
16 competing is in the application of surgical procedures, and
17 there are functional substitutes for that.

18 Q. There's no functional substitute for an EndoWrist
19 currently available in the United States; correct?

20 **MR. MICHAEL:** Object to time period, Your Honor.

21 **THE WITNESS:** Umm --

22 **THE COURT:** Hold on.

23 Would you state a time period, Mr. McCaulley? Your
24 pending question is: There is no functional substitute for an
25 EndoWrist -- oh, currently available in the United States.

1 Please answer that, Dr. Smith, if you can.

2 **A.** There's a premise embedded in that that there's a market
3 for EndoWrists, and I -- I've never agreed that that's a
4 market.

5 The functional substitute for the surgeries that are
6 provided with the da Vinci surgical system are laparoscopy,
7 open, other methods.

8 **BY MR. McCAULLEY:**

9 **Q.** If a surgeon wants to use the da Vinci, they have to have
10 an EndoWrist; correct?

11 **A.** They are essentially perfect complements. They are a
12 singular product basically.

13 **Q.** And a hospital -- you're familiar with the concept of the
14 use counter in the EndoWrist; correct?

15 **A.** I know a little bit about the use counter, what I've read,
16 yes.

17 **Q.** And you've read that every time an EndoWrist is used for
18 the tenth time it becomes disabled; correct?

19 **A.** I think there are some that have longer lives now, but,
20 yeah, I think ten is a common denominator for that.

21 **Q.** And I think we testified -- we touched on this earlier,
22 but how many EndoWrists a hospital needs depends on how many
23 surgeries it does with the robot; right?

24 **A.** How many EndoWrists it will require as part of its
25 contract that it signed with Intuitive will depend on how many

1 surgeries it does.

2 Q. And you're familiar, the reason that we're here is
3 companies like Rebotix, in connection with SIS, offered a reset
4 service for EndoWrists; correct?

5 A. I understand that there were third parties that were doing
6 something to the instrument to reset it and give it back to
7 hospitals, yes, resell it back to hospitals.

8 Q. And you understand that they were doing that at a lower
9 cost than the cost of a corresponding new Intuitive EndoWrist;
10 correct?

11 A. I understand they took an instrument from the hospital
12 that was expired. They did something to it, reset it and sold
13 it back.

14 Yeah, I think the price was generally lower than what they
15 would have paid for a new instrument.

16 Q. And you would agree that in the time period 2019 to 2020,
17 at least some hospitals preferred to buy those reset EndoWrists
18 than new EndoWrists from Intuitive; correct?

19 A. I don't know that that's true once everything was
20 disclosed to them about what that meant for their contract with
21 Intuitive.

22 Q. Well, once they learned that the robot was going to become
23 a paperweight, they had second thoughts; right?

24 MR. MICHAEL: Objection, form, foundation.

25 A. I just --

1 **THE COURT:** Hold on. Hold on, Dr. Smith.

2 **THE WITNESS:** I'm sorry.

3 **THE COURT:** Sustained.

4 Would you reask -- restate your question, Mr. McCaulley?

5 **BY MR. McCAULLEY:**

6 **Q.** At least some hospitals were willing to use the repaired
7 EndoWrists, at least for some period of time; correct?

8 **A.** I'm not sure -- I mean, I think that there were some reset
9 instruments used. I'm not sure why each of those hospitals
10 stopped doing it.

11 **Q.** You know about the campaign that was instituted by
12 Intuitive to stop those practices; correct?

13 **A.** I don't know about -- I don't know that I've seen a
14 campaign.

15 **Q.** You didn't study that as part of your work in this case?

16 **A.** I understand what's in their contract. I understand what
17 hospitals were being told about the EndoWrist resets. And I'm
18 just not sure what all factors led to some of those hospitals
19 stopping using the EndoWrist or the reset EndoWrist.

20 **Q.** Thank you for your answer. I'm not sure it answered my
21 question though.

22 Are you familiar with what Intuitive did when it learned
23 that hospital customers were using reset EndoWrists?

24 **A.** I know it was a concern for them because they were
25 concerned about unauthorized instruments being used. It's in

1 their contract with the hospital.

2 I think that they, with some hospitals, let them know that
3 that was in their contract.

4 Q. But you didn't study that in any detail as part of your
5 work on this case?

6 A. I mean, if it -- what I did study is in my report.

7 Q. And you're not a technical expert; correct?

8 A. I'm not an engineer.

9 Q. And, also, you're not offering any technical expertise
10 here; correct?

11 A. As to the product?

12 Q. Yes.

13 A. No.

14 Q. And you don't know the process that Rebotix used to reset
15 EndoWrists was unsafe; correct?

16 A. I would not be the one to ask about that.

17 Q. So you're not offering any opinions to the jury that there
18 was actually anything unsafe with what Rebotix was doing;
19 correct?

20 A. No. My opinions are related to Intuitive's incentives to
21 provide safe service relative to third parties' incentives to
22 provide safe service.

23 Q. No testimony at all, no opinion at all about whether it
24 was actually safe or unsafe what Rebotix was doing with the
25 EndoWrists?

1 **A.** Only their incentive to provide safe service, which
2 Intuitive has more at stake.

3 **Q.** Do you know anything about Project Dragon that was
4 undertaken at Intuitive?

5 **A.** I --

6 **MR. MICHAEL:** Objection. Beyond the scope of direct.

7 **THE COURT:** Sustained.

8 **BY MR. McCAULLEY:**

9 **Q.** Do you know whether Intuitive had a view internally as to
10 whether or not EndoWrists could be safely refurbished and
11 reset?

12 **MR. MICHAEL:** Objection, scope.

13 **THE COURT:** Sustained.

14 **MR. McCAULLEY:** Your Honor, may we've a sidebar?

15 **THE COURT:** Yes.

16 (Proceedings held at sidebar.)

17 **THE COURT:** Remind me, Mr. McCaulley.

18 **MR. McCAULLEY:** He testified on his direct that
19 patient safety justified what Intuitive did with respect to
20 writing the letters and shutting down and forcing their
21 contracts.

22 **MR. MICHAEL:** Your Honor, that's not what he testified
23 on direct. He testified that Intuitive had statements about
24 risks to its business that were related to patient safety and
25 he testified about how that was related to the contract terms.

1 Mr. McCaulley has just asked him and just established that
2 he is not an expert himself on the question of safety, and now
3 he's going down a road of asking him more questions about
4 things that he hasn't testified at all about on direct and was
5 not claiming to be an expert about.

6 **THE COURT:** Your pending question is whether Intuitive
7 had an opinion or --

8 What was your question? Your question about whether
9 Intuitive had some understanding about that?

10 **MR. McCAULLEY:** I think we all need the little screen,
11 Your Honor.

12 I can move in a different direction, Your Honor. I'm not
13 trying to belabor this point. I just wanted to -- I wanted to
14 make the point that he -- that Intuitive had an internal view
15 of whether or not an EndoWrist could be used past ten lives if
16 it was reconditioned.

17 I thought he had testified to that, but if he didn't, I'll
18 be corrected about it.

19 **MR. MICHAEL:** He didn't, Your Honor. And that is a
20 question about Project Dragon, which had nothing to do with his
21 direct testimony.

22 **THE COURT:** All right. We'll go back. I'll sustain
23 it and ask you to move on.

24 Thank you.

25 (Proceedings held in open court.)

1 **THE COURT:** I'll sustain Mr. Michael's objection.

2 And, Mr. McCaulley, your next question, please.

3 **BY MR. McCaulley:**

4 **Q.** I think you testified, and you'll correct me if I'm wrong,
5 that SIS didn't suffer any damage in this case; correct?

6 **A.** I think I said there was no economic evidence that they
7 were harmed in this case.

8 **Q.** You have also offered testimony that SIS would have
9 siphoned sales away from Intuitive; correct?

10 **MR. MICHAEL:** Objection, scope. That was not in the
11 direct exam.

12 **THE COURT:** I overruled the scope objection.

13 Dr. Smith, can you answer that question?

14 **A.** I think what I can say is they did siphon sales away from
15 Intuitive for a period of time.

16 **BY MR. McCaulley:**

17 **Q.** And once Intuitive intervened, the siphoning stopped;
18 correct?

19 **A.** Again, it's not clear what was the driving factor behind
20 hospitals stopping using the reset instruments, but they did
21 stop.

22 **Q.** I think you testified that Intuitive's continued
23 investment in research and development indicated that they did
24 not have a monopoly; correct?

25 **A.** It's consistent with their ongoing competition with open

1 and laparoscopy.

2 **Q.** And you testified that Intuitive's spending on research
3 and development is more now than it was at any point in its
4 career -- or its history?

5 **A.** It continues to increase, yes.

6 **Q.** And that's also -- you testified, I think, about
7 agreements, and we'll talk about them in a minute, that other
8 robotic companies had with their customers; correct?

9 **A.** Sorry. I don't think I understood that question.

10 **Q.** That's all right. I will ask a more specific question.

11 You gave some testimony about contracts that CMR has with
12 its customers; correct?

13 **A.** Oh, yes. Uh-huh.

14 **Q.** And you -- what was the other one that you talked about,
15 was it the Flex?

16 **A.** Medrobotics.

17 **Q.** So you also talked about the risk associated with making a
18 research and development investment; correct?

19 **A.** That's correct.

20 **Q.** And the fact that Intuitive continues to invest in
21 innovation means it's not a monopolist; correct?

22 **A.** Their behavior is inconsistent with their being a
23 monopolist in the sense that they actually are increasing the
24 amount that they invest year over year.

25 **Q.** Some of their fundamental patents have expired; correct?

1 **MR. MICHAEL:** Objection, foundation.

2 **THE COURT:** Sustained.

3 **BY MR. McCAULLEY:**

4 **Q.** Do you know if some of Intuitive's fundamental patents
5 have expired?

6 **MR. MICHAEL:** Objection, relevance.

7 **THE COURT:** Overruled.

8 **A.** Their patent portfolio is not something that I studied in
9 any detail.

10 **BY MR. McCAULLEY:**

11 **Q.** So you don't have any opinion on how the patent portfolio
12 impacted Intuitive's plans or investments; right?

13 **A.** I just observed that they continued to invest in the
14 product. I don't know -- I have not made a connection to their
15 patents.

16 **Q.** I think you said up until 2019, they didn't have any
17 competitors in robotic surgical systems; correct?

18 **MR. MICHAEL:** Objection, mischaracterizes the
19 testimony.

20 **A.** They always faced competition --

21 **THE COURT:** Hold on. Hold on.

22 Overruled.

23 I will remind everyone that counsel's questions aren't in
24 evidence.

25 Go ahead, Dr. Smith.

1 **A.** They always faced competition. They were an innovator in
2 bringing a new mode of surgery to the market, and they
3 continued to compete to do more surgeries.

4 **BY MR. McCARLEY:**

5 **Q.** But now they are facing competition in the robotic surgery
6 market -- let me begin again.

7 Starting in 2019 through 2022, Intuitive saw competition
8 in the robotic surgery market; correct?

9 **MR. MICHAEL:** Objection to form.

10 **A.** Your question --

11 **THE COURT:** Hold on.

12 **THE WITNESS:** Sorry.

13 **THE COURT:** Sorry. I'm just looking at the question
14 again.

15 (Brief pause.)

16 **THE COURT:** Overruled.

17 Go ahead, Dr. Smith.

18 **A.** Can I have it read back? I apologize.

19 (Requested portion of record read.)

20 **A.** That -- that question presumes there is a robotic surgery
21 market. It -- and then you're asking me about a market that I
22 don't agree with.

23 They have always faced competition from lap and open. I
24 never said that they don't compete with other surgical
25 solutions as they come about, but their principal competition

1 has been with lap and open.

2 **BY MR. McCaulley:**

3 Q. I'll try to ask a question without using the word "market"
4 and without losing my voice.

5 As of 2019 through 2022, there were other surgical robots
6 available in the United States; right?

7 A. There have been some additional robotic platforms that
8 have come into the market, come into -- yeah, they have had
9 sales.

10 Q. And you talked about the risk associated with investing in
11 research and development; fair?

12 A. Yeah. I think when you're really bringing a -- quite an
13 innovation to market, there's significant risks involved with
14 that.

15 Q. But -- we looked at some of the financial statements that
16 you referred to -- let me begin again.

17 But Intuitive was making a lot of money by 2019; right?

18 A. I mean, I think that's the point. You can't look at those
19 margins that happen when they are earning a return on their
20 investment and glean from that that they have some sort of
21 monopoly power. You have to consider the uncertainty
22 surrounding the investments they made when they made them, and
23 what the expected -- what the expected profit was when they
24 were facing that uncertainty.

25 Q. My question is: There's no uncertainty that they would be

1 profitable by 2019.

2 You would agree with that; right?

3 **A.** I do not agree with that. They were continuing to push
4 the frontiers of where their robotic system can compete with
5 lap and open, and there's risk from that.

6 They are trying to do surgeries now with a da Vinci
7 surgical system that they have never been able to do before.
8 And I don't think they know whether they were going to compete
9 those away from lap until they do it.

10 **Q.** Well, there's not -- let me -- I'll leave it where it is.

11 You pointed out in Slide 20 of your slide deck that
12 Medrobotics has similar termination options as Intuitive;
13 correct?

14 **A.** I'd have to look back.

15 **Q.** I don't have control of your slides. I apologize.

16 **A.** Okay. I can look here.

17 **THE COURT:** They are behind the first tab.

18 Do you need a copy, Mr. McCaulley?

19 **MR. McCaulley:** I have one here, Your Honor.

20 **A.** Slide 20, yes. Yes.

21 Yeah, termination should they use accessories not made or
22 approved by Medrobotics.

23 **BY MR. McCaulley:**

24 **Q.** Do you know if Medrobotics limits the number of uses that
25 a hospital can use with a given instrument?

1 **A.** Not that particular facet of the da Vinci surgical system.
2 I think I talked about CMR has that.

3 **Q.** But not Medrobotics?

4 **A.** I don't know, to be honest.

5 **Q.** You are familiar with the Senhance device?

6 **A.** I have heard of the Senhance.

7 **Q.** Does the Senhance device have a use counter?

8 **A.** The Senhance is a -- is finding a different way to compete
9 in the marketplace. These are differentiated products, as I
10 said.

11 My understanding is that the Senhance is what they call an
12 open platform. So it has a different way of going to market
13 and competing with lap and open and Intuitive.

14 **Q.** Now, at the early stages of the launch of the Intuitive
15 da Vinci system, it had no competitors for MIST robots;
16 correct?

17 **A.** You keep -- you're asking me these questions that are hard
18 for me to answer because you're not -- you're not talking about
19 the market in the way that Intuitive competes in it.

20 So were they the only marketed surgical robot at the time?
21 Yes.

22 **Q.** And you're familiar with the fact that companies that are
23 already charging a monopolist price are the -- unable to raise
24 prices; correct?

25 **A.** Everyone is constrained by something.

1 **Q.** Are you familiar with the term the "cellophane fallacy"?

2 **A.** I am familiar with the cellophane fallacy.

3 **Q.** I learned about it from you. So can you explain to us
4 what that is?

5 **A.** It's why a hypothetical monopolist test is not as useful,
6 potentially, in a monopolization case, because if someone -- if
7 a firm is already behaving like a monopolist, then asking if it
8 merged with something and could raise price by a snip is not a
9 useful question, because they are already pricing at the
10 monopoly level.

11 **Q.** And they can't price -- let me withdraw that. That's
12 fine.

13 I'd like to ask you some questions. You said -- with
14 reference to, I believe it was Slide Number 4. Sorry. I've
15 got to read my own chicken scratch.

16 No, it wasn't Slide 4. And while I'm trying to find it so
17 I can direct your attention to it, you talked about the fact
18 that SIS continued to make money over the time period from 2019
19 to 2022?

20 **A.** Yes. What I said was that Intuitive -- any conduct by
21 Intuitive has not affected SIS's ability to compete.

22 **Q.** And I guess I'm wondering what you mean by that. They
23 didn't compete for EndoWrists; correct?

24 **A.** They continued to provide services to hospitals. That's
25 what I meant by that question -- or that answer, sorry.

1 Q. I just wanted to make sure that you were clear. SIS
2 continued to make money in its businesses that were unrelated
3 to the EndoWrist; correct?

4 A. Yeah. My understanding is that they stopped trying to
5 distribute the EndoWrists at some point.

6 Q. Also, you put up a slide that had SIS's marketing
7 materials on there. Do you remember that?

8 A. Yes.

9 Q. I believe it was Slide 18 of your presentation.

10 A. Okay.

11 Q. What SIS was offering at the time was a repair of an
12 Intuitive device; correct?

13 A. My understanding is that it was Rebotix that was resetting
14 instruments. I think they are calling it a repair here. They
15 are advertising that they are doing it.

16 My understanding was what they were actually doing was
17 collecting them, sending them to Rebotix. Rebotix was
18 resetting them, sending them back. And then they were --

19 Q. I'm sorry. They were in a partnership with Rebotix. You
20 understood that; correct?

21 A. My understanding is that they were a distributor for
22 Rebotix.

23 Q. So if you go into the pharmacy and you buy a CVS drug
24 alternative, your understanding is CVS is misbranding that if
25 someone else makes it?

1 **MR. MICHAEL:** Objection. Form, foundation, and I
2 think calls for a legal conclusion.

3 **A.** Umm --

4 **THE COURT:** Hold on.

5 Mr. McCaulley, could you try rephrasing?

6 **MR. McCaulley:** I'll move on, Your Honor.

7 **BY MR. McCaulley:**

8 **Q.** In that Slide 18 you underline a few sentence in red. And
9 I just want to point out, EndoWrist is indicated as a
10 registered trademark; correct?

11 **A.** Yes.

12 **Q.** And da Vinci is indicated as a registered trademark;
13 correct?

14 **A.** Yes.

15 **Q.** The biggest brand that's located on the document that you
16 relied on is SIS; correct?

17 **A.** My point was just that they were leveraging Intuitive's
18 brands in the sale of this service that they were making.

19 **Q.** They weren't pretending to be Intuitive; right?

20 **A.** They were not -- they were not saying they were Intuitive,
21 but they were putting in their marketing materials Intuitive's
22 brands without Intuitive's approval.

23 **Q.** You're not a trademark lawyer; correct?

24 **A.** I'm not.

25 **Q.** Not offering any opinions about how trade names can be

1 lawfully used in advertising; correct?

2 **A.** I was just speaking to free riding.

3 **Q.** It's beyond your expertise; right?

4 **A.** I'm not a trademark lawyer, yeah.

5 **MR. McCAULLEY:** Your Honor, may I have a moment?

6 **THE COURT:** You may.

7 You all are welcome to stretch for a moment.

8 (Discussion held off the record between plaintiff's
9 counsel.)

10 **MR. McCAULLEY:** I'm sorry. I just have a few more
11 questions.

12 **BY MR. McCAULLEY:**

13 **Q.** You offered some testimony about the ability to reset the
14 X and Xi; correct?

15 **A.** I think I said that no one had done it.

16 **Q.** You were here for the testimony of Stan Hamilton of
17 Rebotix. Did you hear that?

18 **A.** It was a video transcript. I may have seen some of it.

19 **Q.** And you're familiar with the fact that Mr. Hamilton said
20 that Rebotix had the technology to reset the X and Xi; correct?

21 **A.** I may have seen that testimony, but I don't recall anybody
22 having it. And I know SIS didn't have it.

23 **Q.** Did you see the testimony of Mr. Humphrey?

24 **A.** I was here for Mr. Humphrey's testimony.

25 **Q.** And you haven't heard anybody rebut that testimony;

1 correct?

2 **A.** I can't say.

3 **Q.** And Mr. Bero relies in his report on Mr. Humphrey's
4 analysis; correct?

5 **MR. MICHAEL:** Objection to the form and to the
6 reference to a report not in evidence.

7 **THE COURT:** Sustained.

8 **MR. McCAULLEY:** Thank you. That's a good objection.

9 **BY MR. McCAULLEY:**

10 **Q.** You know that Mr. Bero testified. You watched his
11 testimony here; correct?

12 **A.** I saw Mr. Bero, yes.

13 **Q.** Mr. Bero testified that he relied on Mr. Humphrey;
14 correct?

15 **A.** Mr. Humphrey and Ms. Sergeant, yes.

16 **Q.** You don't have any -- you haven't offered any technical
17 opinions about the feasibility of solving the encryption on the
18 X and Xi; correct?

19 **A.** My only point was that I -- my understanding is that no
20 one has solved it.

21 **Q.** And that's the only basis of your testimony, that the X
22 and Xi shouldn't be included in Mr. Bero's damages calculation?

23 **A.** Well, I mean, there's a lot of reasons why those damages
24 are likely inflated having to do with whether -- starting with
25 whether Intuitive has done anything anticompetitive, but also

1 including the projections based on Ms. Sergeant's assumptions
2 about sales that would go through Vizient that are disconnected
3 from anything in the real world.

4 Q. But you didn't offer any of those -- that testimony on
5 direct; correct?

6 A. I wasn't asked a question about it.

7 MR. McCAULLEY: Thank you, Your Honor. I have nothing
8 further.

9 THE COURT: Thank you, Mr. McCaulley.

10 Mr. Michael?

11 MR. MICHAEL: Very briefly, Your Honor.

12 Could we bring up TX-536-R, please, a document that
13 Dr. Smith was shown on cross examination? Can we have that,
14 Mr. Lee?

15 (Document displayed.)

16 REDIRECT EXAMINATION

17 BY MR. MICHAEL:

18 Q. Dr. Smith, you were asked some questions about one
19 sentence on one page of this document by Mr. McCaulley. Do you
20 recall that?

21 A. I do.

22 Q. And you testified that in the rest of the document there
23 is discussion about the competition that Intuitive faces from
24 other surgical modalities, including open and laparoscopy;
25 correct?

1 **A.** Yeah.

2 **Q.** And Mr. McCaulley did not show you any other part of the
3 document. He just showed you one sentence; right?

4 **A.** Yeah.

5 **Q.** Okay. So I'd like to show you a couple other parts of the
6 document now.

7 **MR. MICHAEL:** Mr. Lee, if you could highlight under
8 number two on Page 1 of the document the first sentence there?

9 (Document highlighted.)

10 **BY MR. MICHAEL:**

11 **Q.** Dr. Smith, do you see that on Page 1 of this document it
12 says [as read] :

13 "We have had competitors from the beginning."

14 Do you see that?

15 **A.** Yes.

16 **Q.** And what do you understand that to be a reference to?

17 **A.** I think that they are referring to other surgical
18 modalities that they compete with.

19 **Q.** Right. Mr. McCaulley asked you several times if at the
20 very beginning Intuitive was competing against any other
21 robotic-assisted system.

22 Do you recall those questions?

23 **A.** Yes.

24 **Q.** Okay. So when Intuitive says we have had competitors from
25 the beginning, do you understand that to be a reference to

1 other robotic systems or to open and laparoscopy?

2 **MR. McCAULLEY:** Objection. Foundation, Your Honor.

3 **THE COURT:** Mr. Michael, could you -- is this among
4 the documents he considered in preparing his report?

5 **MR. MICHAEL:** This was a document he was shown on
6 cross examination. And he testified he had seen before. And
7 Mr. McCaulley asked him some questions about what he understood
8 the document to mean.

9 **THE COURT:** Can you answer Mr. Michael's question?

10 **THE WITNESS:** I can.

11 **A.** Because as Mr. McCaulley kept saying during his cross
12 examination, there was a period of time where Intuitive had the
13 only robotic platform competing with these other surgical
14 modalities. So I can only infer from that that what's being
15 referred to here is lap and open.

16 **BY MR. MICHAEL:**

17 **Q.** And can I direct you to the top of the second page of the
18 document. Under Number 4, do you see it says [as read] :

19 >Data is our friend. When there are questions
20 around outcomes and economics, we seek out the data
21 with our team of healthcare economists. And it is not
22 just national data, but using our hospital's own data
23 to quantify the impact. When we do that, robotics
24 wins."

25 Do you see that?

1 **A.** Yes.

2 **Q.** And what do you understand the document to be referring to
3 when it says "robotics wins." What does robotics win against?

4 **MR. McCARLEY:** Objection, foundation.

5 **THE COURT:** Sustained.

6 **BY MR. MICHAEL:**

7 **Q.** So as an economist, Dr. Smith, based on the evidence that
8 you've seen in the case, including this document, what did you
9 understand Intuitive's robotics system to be competing against?

10 **MR. McCARLEY:** Same objection, Your Honor.

11 **THE COURT:** Overruled.

12 **A.** So I know from studying this case that quantify the
13 impact, that's what I was showing earlier with the comparisons
14 to lap and open. And so I know when they are talking about
15 robotics wins, they are talking about relative to other
16 surgical modalities.

17 **BY MR. MICHAEL:**

18 **Q.** And let me now ask you to look at the top of Page 3 of the
19 document.

20 And do you see at the top of Page 3 there's a sentence
21 that says [as read] :

22 [Intuitive has always been at the forefront of
23 innovation and we're not stopping now.]

24 Do you see that?

25 **A.** I do.

1 **Q.** And was that consistent or inconsistent with what you
2 observed in the economic evidence about Intuitive's ongoing
3 investment in innovation?

4 **A.** It's consistent.

5 **Q.** And then, finally, Mr. McCaulley asked you again about the
6 very end of the document where there was a question that says
7 [as read] :

8 "Will Intuitive ever go into laparoscopic
9 surgery."

10 Do you see that?

11 **A.** Yes.

12 **Q.** And is it your understanding, based on the evidence that
13 you've seen in this case, that Intuitive was itself planning to
14 go into laparoscopic surgery?

15 **A.** Yeah. It just -- I mean, this -- what was hard is this
16 sentence is sort of inconsistent with the rest of the document,
17 but I -- what they might mean is that they are not becoming a
18 laparoscopic option.

19 **MR. MICHAEL:** You can take that down, Mr. Lee.

20 (Document removed from display.)

21 **BY MR. MICHAEL:**

22 **Q.** Dr. Smith, you referenced in response to some of
23 Mr. McCaulley's questions the concept of differentiated
24 products. Did I get that right?

25 **A.** Yes.

1 **Q.** Does the fact that two products are differentiated from
2 one another, does that mean that they are necessarily in
3 different product markets?

4 **A.** No. I mean, the vast majority of products that are sold
5 in the United States are differentiated in some way. I mean,
6 that is to be distinguished from commodity products like
7 soybeans or something like that. Almost anything else is
8 differentiated, and they compete with other things.

9 **Q.** And do sellers of differentiated products, in your
10 economic understanding and expertise, do they compete by
11 marketing advantages versus disadvantages of the various
12 products?

13 **A.** Yeah. They add a dimension of competition. It's not just
14 about price. It's about offering a different solution to the
15 marketplace. And that's what Intuitive -- what you see in
16 Intuitive's documents. It's not just that they are competing
17 on price. They are also pointing out how they are better than
18 other products.

19 **Q.** And is that form of competition among differentiated
20 products where they are competing by marketing, their
21 advantages and disadvantages, does that indicate to you, as an
22 economist, that those products are in the same market or a
23 different market?

24 **A.** It depends on how significantly they compete with one
25 another. Intuitive is very focused on lap and open and

1 competing with them, and that's how I infer that they are in
2 the same product market in this case.

3 **Q.** And just to be clear, did you consider in this case
4 Intuitive's products in lap and open products to be
5 differentiated products?

6 **A.** They are differentiated products, yes.

7 **Q.** Do you consider those products to be all part of one
8 market in which they compete against one another?

9 **A.** They are in -- in a -- in the same relevant market here.

10 **Q.** And so you talked about these differentiated products
11 competing against one another in terms of their quality and
12 advantages and disadvantages; is that correct?

13 **A.** Yes.

14 **Q.** Okay. And let me ask if, if we could --

15 **MR. MICHAEL:** Sorry, Your Honor. I'll just need to
16 grab this document. It's TX-464, which is already in evidence.
17 I do have some hard copies to hand out, if that's helpful.

18 **THE COURT:** Yes, Mr. Michael.

19 **MR. MICHAEL:** May I approach the witness, Your Honor?

20 **THE COURT:** You may.

21 **MR. MICHAEL:** Your Honor if I could publish Page 38 of
22 this document on the screen, please.

23 (Whereupon document was tendered to the witness.)

24 **THE COURT:** You may. I think you said it's already --
25 Mr. Michael, it's in evidence?

1 **MR. MICHAEL:** It is in evidence, Your Honor.

2 **THE COURT:** Go ahead.

3 **MR. MICHAEL:** Thank you.

4 (Document displayed.)

5 **MR. MICHAEL:** Thank you, Mr. Lee.

6 **BY MR. MICHAEL:**

7 **Q.** So, Dr. Smith, my question is, we were talking about
8 Intuitive marketing its products in competition with open and
9 laparoscopy based on their clinical advantages and
10 disadvantages.

11 Here do you see an example of Intuitive also competing
12 against laparoscopic surgery by marketing a direct price
13 comparison?

14 **A.** Yeah, that appears to be what they are doing here in this
15 document.

16 **Q.** So in this case, have you seen evidence that Intuitive
17 competed with open and laparoscopy both on price and on
18 quality?

19 **A.** Yeah.

20 **Q.** Thank you. That's all the questions I have.

21 **THE COURT:** Thank you, Mr. Michael.

22 Thank you, Dr. Smith.

23 Mr. McCaulley, do you have -- I thanked you too soon. Do
24 you have anything else, Mr. McCaulley?

25 **MR. McCaulley:** No. Thank you, Your Honor.

1 **THE COURT:** I thank you, Dr. Smith. You are excused.

2 (Witness excused.)

3 **THE COURT:** Members of the jury, so thank you all for
4 staying a little bit later today than usual. Let me share with
5 you all that we are actually quite close to the end of the
6 evidence. So I want to just preview for you what's coming next
7 week. There is still -- there's still a bit more to do.

8 So you all will come back -- we'll come back Monday. As
9 you have done all the other days, be here around 8:15. We'll
10 put on the rest of the evidence, the rest of the -- their cases
11 that the parties have to present to you on Monday. It will be
12 a shorter day than usual because then we have some business to
13 do before I give you your Jury Instructions and the parties
14 give their closing arguments. That will happen on Tuesday.

15 So I just want to start to preview that for you, which is
16 just to make it -- just to crystallize it a bit, you won't be
17 here all day Monday -- all right? -- so that you are not
18 waiting around while we are trying to wrap up our own pieces.
19 You'll come and you'll hear what evidence there is left to
20 hear, and then you'll come back Tuesday and we'll get you the
21 case that day.

22 All right? I remind you, as I must, to please not -- to
23 please not begin to discuss the case amongst yourselves, do not
24 discuss it with anyone, do not let anyone discuss it with you.
25 To please let us know if anyone should try to discuss it with

1 you, and to avoid any media accounts or anything that might
2 have to do with this case, and to not undertake any independent
3 research of your own.

4 All right. With that, have a wonderful weekend. I will
5 see you Monday.

6 All rise.

7 (Jury exits the courtroom at 2:40 p.m.)

8 **MR. McCUAULLEY:** Your Honor, before they scatter, I
9 thought you had said we would have a slightly later start on
10 Monday. Was that still your intention or start at 8:30?

11 **THE COURT:** Well, let me -- let me ask you all. I
12 also -- one juror asked to speak with me so I also need to run
13 back there before they scatter. But that's right. I had said
14 that.

15 Can I ask you -- let me tell you what my time constraints
16 are on Monday. I have a sealed setting at 4:00 o'clock. I
17 have settings -- I have an additional setting at 3:00 o'clock,
18 that the 3:00 o'clock needs to be out in time to close the
19 courtroom and get the 4:00 o'clock in.

20 How long do you all think you need for the charge
21 conference? I guess my question for you all is almost a how
22 much time do you want to spend making a record on any -- and
23 it's hard to ask this in the abstract.

24 But assume that you get nothing that you asked for -- it's
25 not going to happen for either of you, but assume for a moment.

1 I think what I have on the record from you are your
2 submissions, your statements for why yours is the better
3 instruction proposed.

4 My question for you is: How much time do you want to
5 spend that day discussing it further?

6 **MR. McCAULLEY:** Nobody wants to go first, Your Honor.

7 **MR. MICHAEL:** You're the plaintiff.

8 **MR. McCAULLEY:** I'm the plaintiff. Thanks.

9 Your Honor, if I had to say, the most that it would take
10 was probably 90 minutes, but I would guess it could be under an
11 hour.

12 **MR. GALLO:** I think that's probably right.

13 **THE COURT:** All right. Well, then, okay. Let's work
14 backwards, then.

15 Or let me ask you, Mr. McCaulley, do you have any sense --
16 you're right. I had been thinking to tell the jury that we
17 would start with them maybe closer to -- if we do the charge in
18 the morning, that we start -- no, that we start with them maybe
19 closer to 10:00 o'clock?

20 **MR. GALLO:** So, Your Honor, just for my understanding,
21 you're talking about us coming in at 8:00, doing the charge
22 conference, and then presenting the last evidence to the jury.

23 Okay. Bill -- I think that's probably fine. That would
24 allow two hours. I think that's fine.

25 **THE COURT:** Let me also ask them -- this is the other

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1 piece. They are all waiting for me. It's not just the one
2 juror. So I can also pause to ask them whether they would
3 rather -- I want to see what suits them.

4 I will share with you there are a couple of jurors, they
5 asked to be here at 8:15. There is a handful of them that show
6 up a full hour ahead because that way the commute is bearable.
7 So for those folks, the late start is probably not ideal. So
8 let me ask them.

9 In the end, I think we'll end up with enough time and I'll
10 make sure you all get the time you need that day.

11 Let me run back there and speak with them, and I will be
12 back with hopefully in less than 15 minutes.

13 (Whereupon there was a recess in the proceedings
14 from 2:43 p.m. until 2:51 p.m.)

15 (Proceedings held in open court, outside the presence
16 of the jury.)

17 **THE COURT:** You may be seated.

18 Counsel, let's pick it back up. Who wants to pick it back
19 up?

20 Go ahead, Mr. McCaulley.

21 **MR. VAN HOVEN:** I guess we're waiting to hear feedback
22 on the jurors on when they want to start.

23 **THE COURT:** Sorry. Thank you.

24 All right. So I spoke with the jurors, and, yes, they
25 want to start in the morning at the regular time because --

1 because for a handful of them, if we start later, they don't
2 trust the traffic. So they want to start at 8:30, which I
3 think makes sense.

4 And so what we'll do, to shuffle it all we'll start at
5 8:30. Twenty-five minutes of video from you, Mr. Gallo.

6 Anything beyond that?

7 **MR. GALLO:** No.

8 **THE COURT:** And then, Mr. McCaulley, any -- you'll put
9 on any rebuttal case you might have?

10 **MR. McCAULLEY:** Yes, Your Honor. And I will try to
11 pare it down to zero, but no more than 30 minutes.

12 **THE COURT:** Well, at this point -- they are coming,
13 anyways. So, you know, they are coming and what we'll do --

14 I imagine, Mr. Gallo, you will have a renewed motion to
15 make, so we'll do that at that time. And we will plan to do
16 the charge conference thereafter.

17 I imagine that you all can expect to see something posted,
18 something for us to discuss and for you all to react to. My
19 plan right now is to -- well, my plan is for tomorrow.

20 My plan is that you all should see it probably tomorrow
21 afternoon. There is a -- I have a bad habit of wanting to say
22 you'll get it sooner and I'm fighting myself not to say that
23 right now. I'm going to say tomorrow afternoon and stick with
24 it. So we'll say tomorrow afternoon.

25 And they are your proposals. So, really, it will be you

1 all telling me why I picked the wrong one, but -- for the most
2 part I think.

3 What else?

4 **MR. GALLO:** We reached agreement on some things that
5 probably is worth probably just putting in the record and,
6 obviously, if the Court has a problem with it, you'll let us
7 know.

8 We agreed that Mr. McCaulley will give us any documents he
9 wants to use with his rebuttal witnesses. I think 9:00 o'clock
10 tomorrow morning is what we said. So that we will have -- I
11 mean, you know, to try to sort of follow the protocol that we
12 have been following. It's -- the timing is a little different,
13 but the spirit is the same.

14 **THE COURT:** I appreciate that. And we talked a little
15 bit earlier about demonstratives for your closing arguments.

16 **MR. GALLO:** We had agreed that we would exchange our
17 demonstratives at -- subject to the Court's approval, at 5:00
18 o'clock on Sunday -- 6:00 o'clock on Sunday. We would talk to
19 one another to try to resolve any objections at 8:00 p.m. on
20 Sunday so that we would be prepared to bring anything that's
21 outstanding to Your Honor Monday morning.

22 The only caveat being we also agreed, if it's acceptable
23 to the Court, to have a sort of little exception, maybe two or
24 three exhibits that we would exchange on Monday if we felt a
25 need to do so.

1 **THE COURT:** I hear you. After we spoke on Sunday,
2 this came to me in a dream. That's fine. I think that's fine.

3 What I'll hope you all will do is right shortly before
4 8:00 o'clock, just anything that you can give to me to look at,
5 if there is anything that I need to look at in terms of
6 demonstratives, pass them to Ms. Solorzano-Rodriguez. She will
7 bring them back.

8 I said five to 8:00, but I don't mean that. I actually
9 probably mean ten to 8:00 so that I can come join you all at
10 8:00 o'clock and we can get that all resolved.

11 I guess we don't need to do it before the jury starts,
12 but --

13 **MR. McCARLEY:** I don't think so, Your Honor.

14 I also told Mr. Gallo, and I think we kind of agreed, our
15 slides are -- I'm not going to put any fire or pyrotechnics
16 into this. It's just going to be citations to the evidence.

17 I can't promise there won't be a picture or two, but I
18 don't -- I think we have an understanding and we have been --
19 we've had our moments, but we've been able to work
20 together, so I don't think there is going to be a problem.

21 **MR. GALLO:** It's all fine, Your Honor. And I agree.
22 I mean, if the Court wishes to handle it at 8:00 a.m., of
23 course, we can do it, but it can be handled later in the day.

24 **THE COURT:** I'm realizing I'm just running through the
25 motions to get it all ready for the jury, but they won't

1 need -- they won't need that at 8:30. So we can plan to do
2 that after.

3 Just block them for Ms. Solorzano-Rodriguez, and we can
4 plan to just take them up after we send the jury home for the
5 day.

6 In terms of -- well, I can always ask you this on Monday.
7 I would like you to start thinking about this, please,
8 Mr. McCaulley, whether you want -- you all each gave me --
9 Mr. McCaulley, you asked for about two hours for closing.
10 Mr. Gallo said, I think -- my note said something like two
11 hours on the outer edges there.

12 **MR. GALLO:** That's fine. Yeah. I think it's going to
13 be shorter than that. But if Mr. McCaulley is reserving two,
14 then I will reserve two.

15 **MR. McCAULLEY:** I think I said at the outside as well,
16 Your Honor. And my opening I thought was going to be longer
17 than it was, and it came in significantly under. But, I mean,
18 it won't be more than two. I would guess I would try to keep
19 to it 75 to 80 minutes.

20 **THE COURT:** And, Mr. McCaulley, my one question for
21 you is -- and, again, this is something I would appreciate an
22 answer to on Monday, I don't need to hear it now -- is whether
23 you want -- whether it's 75 minutes or two hours, whether you
24 want all of it in one shot or if you want to reserve a piece of
25 it for after Mr. Gallo's.

1 **MR. McCAULLEY:** I would reserve ten minutes, Your
2 Honor, but it would come out of the total.

3 **THE COURT:** Yes, it would.

4 Okay. Counsel, I think that's everything. What else do
5 you all have?

6 I see Ms. Parker.

7 **MS. PARKER:** Sorry, Your Honor. We just had a
8 question about logistics for next week. Apologies if we've
9 addressed this before and have forgotten it.

10 How would you like to go about sending exhibits back with
11 the jury for deliberation? Do you want those in hard copy? Do
12 you want them on a thumb drive? Do you want something else?
13 Just so we can use the weekend to coordinate that on that
14 logically.

15 **THE CLERK:** Thumb drive.

16 **MS. PARKER:** With just the admitted exhibits?

17 **THE CLERK:** Correct. And in addition, counsel will
18 need to reconcile those exhibits Monday once we end.

19 **THE COURT:** Mr. McCaulley?

20 **MR. McCAULLEY:** It does raise one question that
21 Mr. Gallo raised with me earlier about at the end of the case
22 if we had some documents that we wanted into evidence that
23 aren't objected to, if there was a procedure that the Court
24 would like us to follow or if the Court would like us to follow
25 the procedure of not doing that.

1 **THE COURT:** Well, you'll remember that early on I -- I
2 think you can admit them into evidence, but they won't be part
3 of what goes to the jury; right? What goes to the jury are
4 things that you have admitted and published to them.

5 **MR. GALLO:** I think that may well resolve the issue,
6 Your Honor. We can talk and see if there's any issue to raise
7 with you.

8 **THE COURT:** Let me know Monday if there's more to
9 discuss.

10 **MR. McCAULLEY:** You referred to Mr. Gallo's renewed
11 motion. There are counterclaims, Your Honor, and I do
12 anticipate making a motion as well. And just -- we'll come in
13 with video evidence, so I think it's closed.

14 I'm not giving away state secrets, but I'm not sure if
15 Mr. Gallo intends to send his counterclaims to the jury. There
16 is no evidence of lost profits or damages --

17 **THE COURT:** You're making that motion on Monday,
18 Mr. McCaulley.

19 **MR. McCAULLEY:** Well, I want to preview it now, Your
20 Honor, because I'm not sure -- I don't want to take anybody by
21 surprise, but it might affect the charge as well.

22 **THE COURT:** I'm sorry. I thought we talked earlier
23 that the rebuttal would not affect the charge. But you
24 think -- you think it would affect only the counterclaims?

25 **MR. McCAULLEY:** Not the rebuttal, Your Honor. The --

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1 the Rule 50 motion from the plaintiffs.

2 **THE COURT:** I see. Well, I appreciate you flagging it
3 for me as a thing to at least make space for in my thinking.

4 **MR. McCAULLEY:** Nothing further from the plaintiff,
5 Your Honor.

6 **MR. GALLO:** Nothing further. Thank you.

7 **THE COURT:** Have a good weekend, all. Hope you get
8 some rest.

9 (Whereupon at 3:00 p.m. further proceedings were
10 adjourned until Monday, January 27, 2025 at
11 8:00 a.m.)

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CERTIFICATE OF REPORTER

I certify that the foregoing is a correct transcript from
the record of proceedings in the above-entitled matter.

Debra L. Pas

Debra L. Pas, CSR 11916, CRR, RMR, RPR

Friday, January 24, 2025